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Small Satellite Legal Issues

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SMALL SATELLITE LEGAL ISSUES

PAUL B. LARSEN*

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I. INTRODUCTION¹

“LITTLE SPACE CULTURE is ready to take over a large share of future unmanned activities in space.”² Recent plans to place a large number of small satellites in orbit present a host of new legal issues. Previous discussion of law and regulation of outer space has assumed use of large complex satellites like the military satellites launched by the United States, Russia, and China, and the communication satellites launched by INTELSAT, SES, INMARSAT, and EUTELSAT. These satellites can be the size of multistoried buildings and may cost \$400 million to build and \$100–200 million to launch. But many tasks in space that formerly required complex, expensive satellites can now be performed by very small satellites.³ These miniaturized satellites are sometimes called “cubesats” because they are only ten centimeters tall, wide, and deep.⁴ Whereas the large satellites are built to perform multiple tasks and last a long time, the small satellites are less complex and last a much shorter time.⁵ Since small satellites are so much less expensive than existing large satellites, they may be treated as being disposable. They can also be mass-produced, whereas existing large satellites are planned and built individually, one at a time. Small satellites tend to be used in low Earth orbit (LEO) where they have an inherent advantage of clock speed over the large satellites in geostationary Earth orbits (GEO).⁶ In the current high-technology world, that is a significant advantage.

We are at a stage of tension between older, proven technology of large, expensive, complex, and durable satellites and their likely replacement by inexpensive, expendable, short-term satellites. There is an expectation that this new technology will need

¹ SMALL SATELLITES, REGULATORY CHALLENGES AND CHANGES (Irmgard Marboe ed., 2016). This book is an important resource on the special legal problems of small satellites. It is a collection of essays authored by small satellite experts, and presented as a briefing for the COPUOS Legal Subcommittee.

² Freeman Dyson, *The Green Universe: A Vision*, N.Y. REV. BOOKS (Oct. 13, 2016), <http://www.nybooks.com/articles/2016/10/13/green-universe-a-vision/> [https://perma.cc/6LVX-ZUCB].

³ SMALL SATELLITES, REGULATORY CHALLENGES AND CHANGES, *supra* note 1, at 68.

⁴ *Id.*

⁵ *See id.* at 68–70.

⁶ Jono Anderson, *The Coming Satellite Revolution*, AVIATION. & SPACE TECH., Aug. 12, 2016; *see* Marco Villa, *Builders of Satellites Large and Small Must Work Together to Benefit Science*, SPACE NEWS MAG. (Aug. 1, 2016), <https://www.spacenewsmag.com/commentary/builders-of-satellites-large-and-small%E2%80%A8must-work-together-to-benefit-science/> [https://perma.cc/27YN-WA5T].

new operating principles.⁷ The current plans for deployment of small satellites will drastically change the outer space environment. As of 2016, there are about 1,400 functioning satellites in orbit, in addition to non-functioning satellites, and almost incalculable amounts of space debris.⁸ To this already crowded environment, one expert estimates the launch of an additional 3,800 small satellites by 2020.⁹ On November 17, 2016, Elon Musk, President of SpaceX, requested permission from the Federal Communications Commission (FCC) to launch 4,425 small satellites in LEO using the Ka/Ku-band radiofrequency spectrum.¹⁰ And yet others have indicated interest in launching small satellites.¹¹ Thus, within a few years, satellite navigation and tracking will become more complex. New launches will have to be planned more carefully, particularly in LEO, in order to avoid interference. Space situational awareness will become even more important than before this new development. The cumulative consequences of launching thousands of these tiny satellites will be great.

The fact is that the commercial space industry is growing significantly.¹² There are dozens of new private launch companies either already operating or on the drawing board. Chief among them is SpaceX, which is able to launch significantly more

⁷ Villa, *supra* note 6.

⁸ Goktug Karacalioglu, *Impact of New Satellite Launch Trends on Orbital Debris*, SPACE SAFETY MAG. (June 2, 2016), <http://www.spacesafetymagazine.com/space-debris/impact-new-satellite-launch-trends-orbital-debris/> [https://perma.cc/5JA9-EWZB]; Brian Weeden, *Insight – Small Satellites and Space Situational Awareness*, SECURE WORLD FOUND. (Sept. 1, 2016), <https://swfound.org/news/all-news/2016/09/insight-small-satellites-and-space-situational-awareness> [https://perma.cc/46WD-U357]; see also *Technology Quarterly: A Sudden Light*, ECONOMIST (Aug. 25, 2016), <http://www.economist.com/technology-quarterly/2016-25-08/space-2016> [https://perma.cc/C4A7-6D5Y] [hereinafter *Technology Quarterly*].

⁹ Karacalioglu, *supra* note 8.

¹⁰ *First Take: Space*, AVIATION WK. & SPACE TECH., Nov. 21, 2016, at 11; Peter B. de Selding, *Enough Satellites to Darken the Skies*, SPACE NEWS MAG. (Nov. 21, 2016), <https://www.spacenewsmag.com/the-bottom-line/enough-satellites-to-darken-the-skies/> [https://perma.cc/K9TE-J8GF]. SpaceX plans to launch these satellites during the next ten years, offering a global satellite Internet service. SpaceX will also act as launcher for small satellite companies. See *Technology Quarterly*, *supra* note 8.

¹¹ See de Selding, *Enough Satellites*, *supra* note 10.

¹² See Dylan Taylor, *Smallsats and the Multi-Trillion-Dollar Data Set*, SPACE NEWS MAG. (Aug. 1, 2016), <https://www.spacenewsmag.com/august-1-2016/smallsats-and-the-multi-trillion-dollar-data-set/> [https://perma.cc/NS6A-63NP]. A billion dollars was invested in small satellites from 2013 to 2016.

cheaply than other launch operators.¹³ SpaceX is a multiple-use launcher serving a mix of large and small satellites. SpaceX's large Falcon 9 launch rocket is able to launch ninety small satellites in one launch.¹⁴ The September 1, 2016, destruction of a Falcon 9 rocket during launch at Cape Canaveral will delay some of the planned launches in the short term.¹⁵ However, SpaceX is expected to recover its pace of launches.¹⁶ Other launch operators such as Arianespace, Blue Origin,¹⁷ and Vector Space Systems are eager to jump into the small satellite launch business.¹⁸

A California company, Planet, is an example of the start-ups engaged in building small satellites.¹⁹ The small satellites of Planet each carry a telescope that is able to observe the Earth. Planet currently operates sixty-three small remote sensing satellites in LEO. Each satellite lasts nine to eighteen months. The satellites are inexpensive and their frequent replacement is part of the business plan. Even existing large space companies are beginning to take notice of low-cost small satellite technology.

Expert estimations of the number of small satellites to be launched in the next decade vary.²⁰ Euroconsult estimates the launch of 3,600 small satellites. A small satellite company called One Web is being established jointly by INTELSAT, Virgin Galactic, and Airbus. One Web plans to launch 648 small satellites in LEO. These satellites will provide continuous and simultaneous communication service to and from anywhere on Earth.

¹³ See *Technology Quarterly*, *supra* note 8.

¹⁴ Mike Wall & Calla Cofield, *SpaceX Returns to Flight with 10-Satellite Launch, Rocket Landing*, SPACE.COM (Jan. 14, 2017), <http://www.space.com/35338-spacex-return-to-flight-rocket-launch-landing-success.html> [https://perma.cc/Y44H-QS LX].

¹⁵ Peter B. de Selding, *The White Knight is Talking Backwards*, SPACE NEWS MAG. (Sept. 12, 2016), <http://www.spacenewsmag.com/the-bottom-line/the-white-knight-is-talking-backwards/> [https://perma.cc/WGK5-JWW6].

¹⁶ See *Mission, Interrupted*, ECONOMIST (Sept. 10, 2016), <http://www.economist.com/news/business/21706560-expensive-rocket-accident-puts-pressure-spacex-mission-interrupted> [https://perma.cc/2RHV-RFF6].

¹⁷ See Frank Morring Jr., *When to Reuse*, AVIATION WK. & SPACE TECH., Nov. 7, 2016, at 52. Blue Origin and SpaceX are both developing reusable launch vehicles to reduce the cost of launches. Reusable launch vehicles are particularly favorable for launches into LEO.

¹⁸ See *Technology Quarterly*, *supra* note 8; see also de Selding, *The White Knight*, *supra* note 15; Jeff Foust, *Big Markets for Small Rockets*, SPACE NEWS MAG. (Aug. 15, 2016), <https://www.spacenewsmag.com/foust-forward/big-markets-for-small-rockets/> [https://perma.cc/FH67-PXCM].

¹⁹ See *Technology Quarterly*, *supra* note 8.

²⁰ See *id.*

Thus, the developing countries would have the same communication access as do the developed countries.²¹ In 2016, *Space Safety Magazine* surveyed the commercial space business and ascertained that the following remote sensing and weather companies planned to launch small satellites during the next four years: Blacksky, CICERO, EROS, and Landmapper.²² Additionally, the following communication satellite companies planned small satellite launches: Leosat, Northstar, O3b, OmniEarth, One Web, OuterNet, Planet, Radarsat, Terra Bella, SpaceX, and Spire. Of these companies, Planet plans to launch 450 small satellites; Spire will launch 300 satellites; One Web will launch 750 satellites; and SpaceX will launch 600 satellites.²³ *Space Safety Magazine* estimates the currently planned launches to be as follows: 493 launches in 2016; 388 launches 2017; 743 launches in 2018; 1,189 launches in 2019; and 993 launches in 2020.²⁴ Because small satellites last only nine to eighteen months, it is assumed that this high volume of launches will continue at the same rate beyond 2020. Other experts estimate even higher numbers of small satellites in outer space.²⁵ As mentioned above, SpaceX now plans to launch and operate a network of 4,425 small communication satellites.²⁶

Space debris caused by launch rockets and non-functional satellites remaining in outer space must also be considered. One expert estimates that “from 2036 collisions [will] start to occur regularly,”²⁷ and there will be numerous close encounters, which satellite operators will seek to avoid. At that point in time,

²¹ *Id.*

²² See Karacalioglu, *supra* note 8.

²³ *Id.* This estimate does not include Elon Musk’s plan to launch 4,425 small-sats. See *Technology Quarterly*, *supra* note 8; de Selding, *Enough Satellites*, *supra* note 10.

²⁴ Karacalioglu, *supra* note 8.

²⁵ 2016 International Astronautical Congress (IAC) Panel Discussion, Projection and Stability of the Orbital Debris Environment in the Light of Planned Mega-Constellation Deployments (Sept. 29, 2016) [hereinafter 2016 IAC Panel Discussion]. Elon Musk, Chief Executive Officer of SpaceX, applied to the FCC to launch a satellite-based global internet system consisting of 4,425 small satellites. See Sue Halpern, *The Man for Mars*, N.Y. REV. OF BOOKS (Aug. 13, 2015), <http://www.nybooks.com/articles/2015/08/13/elon-musk-man-mars/> [<https://perma.cc/A56B-5CQD>]; see also de Selding, *Enough Satellites*, *supra* note 10; Frank Morring Jr., *Collision Course*, AVIATION WK. & SPACE TECH., Oct. 10, 2016, at 18.

²⁶ de Selding, *Enough Satellites*, *supra* note 10; see also *Technology Quarterly*, *supra* note 8 (discussing SpaceX plans).

²⁷ Karacalioglu, *supra* note 8; see also Section VIII, Space Debris and Environmental Issues, *infra*.

the operators may become overwhelmed by traffic “conjunctions.” It will be difficult to maneuver all the satellite traffic adequately.

All these small satellite activities bring into issue the Outer Space Treaty articles I, II, VI, VII, and IX;²⁸ the Liability Convention;²⁹ the Registration Convention;³⁰ the Search and Rescue Convention;³¹ U.N. resolutions on remote sensing and space debris; the ITU legal regime;³² as well as implementing national laws and regulations and their administration.³³

II. USES OF SMALL SATELLITES

Earth observation and communication are currently the two most important commercial satellite activities.³⁴ There will be extensive use of small satellites for these tasks. Thousands of small satellites all around the globe will be present and available for communication to and from all parts of the world. Small satellites are excellent for Earth observation of disasters, and can report on changing weather conditions. They will be essential for administration of the 2015 Paris Agreement on Climate Change. Small satellites also serve the military through various offensive and defensive tasks, including observation of military installations and collection of intelligence information.³⁵ They can be used for scientific research and exploration both on Earth and in outer space.

The major focus of this discussion will be on small satellite activities in LEO because that is where small remote sensing and communication satellites will be predominantly located. A few

²⁸ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 610 U.N.T.S. 205 [hereinafter Outer Space Treaty].

²⁹ Convention on International Liability for Damage Caused by Space Objects, Mar. 29, 1972, 961 U.N.T.S. 187 [hereinafter Liability Convention].

³⁰ Convention on Registration of Objects Launched into Outer Space, Jan. 14, 1975, 1023 U.N.T.S. 15 [hereinafter Registration Convention].

³¹ Agreement on Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, Apr. 22, 1968, 672 U.N.T.S. 119 [hereinafter Search and Rescue Convention].

³² COLLECTION OF THE BASIC TEXTS OF THE INTERNATIONAL TELECOMMUNICATION UNION ADOPTED BY THE PLENIPOTENTIARY CONFERENCE 3–54 (2015 ed.) [hereinafter ITU Constitution].

³³ See Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, Dec. 5, 1979, 1363 U.N.T.S. 3 [hereinafter Moon Treaty].

³⁴ See Taylor, *supra* note 12.

³⁵ See ITU CONSTITUTION, *supra* note 32; *infra* Section X, Small Satellite National Security Issues.

small satellites are planned for exploration of the Moon and asteroids and for possible mining³⁶ and military uses.³⁷

III. LICENSING OF SMALL SATELLITE OPERATIONS

The launch of Sputnik in 1957 was a government military operation, and the first deployments of satellites in outer space were government operations. While military satellite activities in outer space continue, the predominant nature of small satellite deployment is now by private commercial operators.³⁸ About \$1 billion is currently being invested in small satellites.³⁹ Thus, investments in outer space are moving from government spending for large projects to small private activities.⁴⁰ The nature of private commercial operations differs significantly from government operations because private operators are driven by the profit motive, whereas government operations are motivated by public service and for military requirements.

Private entrepreneurs are dependent on their governments. Private operators can only operate in outer space by the authority of their governments, which are holders of the legal rights to use outer space as parties to the 1967 Outer Space Treaty.⁴¹ Thus, private operators derive their operating authority to use outer space from their individual governments, subject to their continuous oversight. Pursuant to Outer Space Treaty article VI, private small satellite operators must apply to their governments for licenses to launch into, and operate in, outer space.⁴²

Most of the current small satellite applicants are located in the United States, and thus, the U.S. government will be the recipient of most applications. Applicants' first licensing initiative is usually to apply to the FCC for permission to use radiofrequencies and orbital slots under the Communications Act.⁴³ U.S. legislation has been enacted giving the Federal Aviation Administration (FAA) authority to license launches and reentry of

³⁶ *Technology Quarterly*, *supra* note 8.

³⁷ *See infra* Section X, Small Satellite National Security Issues.

³⁸ *Technology Quarterly*, *supra* note 8.

³⁹ *See* Clay Dillow, *Here's Why Small Satellites Are so Big Right Now*, FORTUNE (Aug. 4, 2015), <http://fortune.com/2015/08/04/small-satellites-newspace/> [<https://perma.cc/87KV-7WRQ>].

⁴⁰ *Technology Quarterly*, *supra* note 8.

⁴¹ *See* Outer Space Treaty, *supra* note 28, arts. III, VIII.

⁴² *Id.* art. VI.

⁴³ Communications Act of 1934, 47 U.S.C.A. §§ 301 et seq. (West 2017); *see infra* Section IV, Radiofrequencies and Orbits Must be Licensed by their National Governments and Regulated by the International Telecommunication Union.

satellites.⁴⁴ Consequently, U.S. private small satellite operators need FAA launch operating licenses for each small satellite in accordance with FAA regulations. The FAA has adopted licensing criteria pursuant to the U.S. Commercial Space Launch Act.⁴⁵ These criteria include FAA examination of whether the launch accords with U.S. national interests, public health and safety, and the applicant's ability to launch from a particular launch site. The FAA also reviews the application for reentry from outer space.⁴⁶ The applicant must show understanding of the safety rules and have a safety plan for each launch, including plans for accident investigation and emergencies.⁴⁷ The applicant must convince the FAA of the safety of the payload and its eventual safe reentry and the applicant's ability to meet possible environmental effects of the launch, including compliance with the space debris rules described below.⁴⁸ The National Oceanic and Atmospheric Administration (NOAA) manages U.S. remote sensing satellites, as well as authorizes small satellite commercial remote sensing satellites.⁴⁹ The oversight over outer space operations has not yet been delegated by implementing legislation. Thus, the Outer Space Treaty's article VI treaty obligation remains the responsibility of the U.S. Department of State (USDOS).

Other countries require licenses for private launches, either pursuant to the direct authority of the Outer Space Treaty or by authority of national laws adopted in conformity with the Outer Space Treaty. Some small satellite operators may consider launch in so-called flag of convenience states, a practice that is common in maritime shipping.⁵⁰ Flag of convenience states may not be well equipped for government oversight of launches and oversight over their operations. Thus, they may not be able to police compliance with the Outer Space Treaty's article VI treaty obligations effectively and may present a danger to the outer space operations of other states.

⁴⁴ Commercial Space Launch Act, 51 U.S.C.A. § 50904; *see infra* Section III, Licensing of Small Satellite Operations.

⁴⁵ 51 U.S.C.A. § 50904 et seq.

⁴⁶ *Id.*

⁴⁷ *Id.* § 50905.

⁴⁸ *Id.* § 50904.

⁴⁹ 51 U.S.C. § 60101 et seq.; *see infra* Section V, Small Satellite Remote Sensing.

⁵⁰ *See* LYALL & LARSEN, *supra* note *, at 94–95 (discussing the problem of flags of convenience states in space law and the need for a genuine link between the real home state and space objects).

IV. RADIOFREQUENCIES AND ORBITS MUST BE
LICENSED BY THEIR NATIONAL GOVERNMENTS AND
REGULATED BY THE INTERNATIONAL
TELECOMMUNICATION UNION⁵¹

The International Telecommunication Union (ITU) manages the radio spectrum. Operating satellites, including small satellites, in outer space requires ITU clearance of radiofrequencies and related orbits.⁵² Under the ITU legal regime, each individual small satellite operating in outer space will have to obtain cleared radiofrequencies in order to be placed in orbit, to communicate with its earth stations, and to be given instructions to de-orbit at the end of its useful life. For those purposes, the satellites need to be navigable (in the past, amateur and experimental small satellites have often not been navigable, and thus not able to circumvent other traffic).

The operator will also need an exclusive orbital slot which is free of all obstructions. The operator's satellite would be useless without a cleared radiofrequency and an exclusive orbit. Outer space is subject to neither national nor private appropriation by virtue of Outer Space Treaty's article II.⁵³ Thus, the operator cannot obtain property rights in radiofrequencies and orbital slots. All that ITU can provide is an ITU-recognized exclusive use. The ITU legal regime enables small satellite operators to obtain the necessary frequencies and orbits in accordance with and subject to its regulations. The ITU Constitution's article 4(3) establishes international standards to ensure unhindered global communication.⁵⁴ Applying those standards, ITU records a cleared radiofrequency in its public frequency register. It will monitor and protect it from radio interference by non-recognized operators. ITU may even allocate radiofrequency bands to

⁵¹ See *generally id.* at Chapter 8: Radio and the International Telecommunication Union.

⁵² See ITU CONSTITUTION, *supra* note 32, art. 44, para. 2.

In using frequency bands for radio services, Member States shall bear in mind that radio frequencies and any associated orbits, including the geostationary-satellite orbit, are limited natural resources and that they must be used rationally, efficiently and economically, in conformity with the provisions of the Radio Regulations, so that countries or groups of countries may have equitable access to those orbits and frequencies, taking into account the special needs of the developing countries and the geographical situation of particular countries.

⁵³ Outer Space Treaty, *supra* note 28, art. II.

⁵⁴ ITU CONSTITUTION, *supra* note 32, art. 4, para. 3.

secondary operators, but only on the condition that they will not interfere with the use of the primary operators. Small satellite services have, until recently, utilized the more lenient and permissive legal regime set aside by the ITU for amateur satellite services. However, small satellites have now graduated to assigned services in the regular service regime. Small satellites are now processed in the same way as large satellites, in accordance with article 5 of the ITU's radio regulations.⁵⁵

ITU is an international treaty organization. Individual operators cannot obtain cleared radiofrequencies or orbital slots directly from ITU. Only their national states and agents of the governments can request radiofrequencies and orbital slots because only they are parties. Individual operators must apply for ITU-recognized operating rights through their national states. Furthermore, the ITU Constitution's article 6 obligates the states to comply and enforce the ITU legal regime on all international services that may cause harmful interference with ITU allocated rights in outer space.⁵⁶

Considering the multitude of small satellites that are planned for orbit⁵⁷ and the continuous stream of replacement satellites, the administration and oversight of cleared individual radiofrequencies and orbital slots will be a very time consuming task for the operators, their governments, and for the ITU administration. Therefore, the 2012 ITU World Radio Conference assigned a special ITU working group the task of reviewing the radio regulations, and ascertaining whether small satellites should be treated differently from large satellites. In 2015, the working group recommended that small satellites should "comply with the applicable international and national laws, regulations and procedures, indispensable to guarantee the long-term sustainability of small satellite projects, the avoidance of harmful interference and proper management of space debris."⁵⁸

Launch of small satellites without the ITU's clearance is not a recommended option because operators will not have assured

⁵⁵ INT'L TELECOMM. UNION, RADIO REGULATIONS RR5-1 (2016 ed.).

⁵⁶ ITU CONSTITUTION, *supra* note 32, art. 6, paras. 1-2.

⁵⁷ de Selding, *supra* note 10; Karacalioglu, *supra* note 8.

⁵⁸ Prague Declaration on Small Satellite Regulation and Communication Systems as reprinted in SMALL SATELLITES, REGULATORY CHALLENGES AND CHANGES, *supra* note 1, at 263. It may be noted that the focus of the Prague Declaration appears to be on small satellites launched by universities, governments, and radio amateurs, rather than on the avalanche of commercial small satellites subsequently planned by private industry.

interference-free access and control over their satellites. Harmful interference complaints would quickly be filed with the ITU, which in turn would obligate individual governments to enforce their treaty obligations to enforce the ITU regime because the ITU Constitution's article 45 requires states to respect existing ITU registrations.⁵⁹ Furthermore, small satellite operators would likely have difficulty obtaining financing for such unreliable operations. It would not be good business.

Since private small satellite operators cannot directly initiate applications for use of radio frequencies and related orbital slots, they must first request that their national governments ask the ITU for allocation of specific frequencies and orbital slots. For example, in the United States, the FCC would be the designated agency. Under the Communications Act, 47 U.S.C. 301 and 307, the FCC determines whether an application to provide commercial satellite service within the United States is in the public interest.⁶⁰ Section 301 states: "No person shall use or operate any apparatus for the transmission of energy or communications or signals by radio" to, from, or within the United States, except in accordance with the Communications Act and "with a license granted in that behalf [by the FCC] under the provisions of this [Act]."⁶¹ The FCC will require the applicant to provide all relevant information for the FCC to decide whether grant of the application is in the public interest.⁶² In determining public interest, the FCC considers: availability of spectrum, effect on competition, technical characteristics, possible interferences, eligibility requirements, as well as impacts to national security, law enforcement, foreign policy and trade. The FCC will make major decisions only after an invitation for public comments and a public hearing.

The regulatory authority of the FCC may be illustrated by the following case.⁶³ Two small satellite companies, Planet and Spire Global, contracted with SpaceX to launch ninety small satellites into a single elliptical orbit presently used by another company, Orbcomm. The ninety satellites were supposed to be launched

⁵⁹ ITU CONSTITUTION, *supra* note 32, art. 45.

⁶⁰ 47 U.S.C.A. §§ 301–308.

⁶¹ *Id.* § 301.

⁶² *See id.* § 307(c)(1).

⁶³ *See* Peter B. de Selding, *Spaceflight's 90-Satellite Mission, a Boon for Smallsats, is a Nightmare for Orbcomm*, SPACE NEWS MAG. (Aug. 1, 2016), <https://www.space.newsmag.com/feature/spaceflights-90-satellite-mission-a-boon-for-smallsats-%E2%80%A8is-a-nightmare-for-orbcomm/> [https://perma.cc/ATQ8-PEPR].

at once, in a kind of swarm of satellites, immediately to be navigated into a specific order. Orbcomm expected to receive a conjunction of potential collision warnings from the U.S. Air Force satellite trackers immediately after the ninety satellites were launched. Consequently, Orbcomm petitioned the FCC to halt the launch until it could be assured that the launch would not interfere with Orbcomm's assigned orbit.

Small satellite operators planning to launch communication satellites will not only need FCC license to obtain radiofrequencies for satellite navigations purposes, but they will also need to obtain FCC permission to use and to beam radiofrequencies into the United States. Subsequent to an FCC decision to coordinate with the ITU, the applicant may provide specific details to the ITU as part of the frequency registration. ITU allocation is based on a first-come-first-served principle; thus, as soon as the applicant makes its formal request, it is placed in line for available frequencies and slots. The request starts an examination with the ITU of whether the requested frequencies and slots will result in harmful interference with existing uses. Thus, when the request is made public by the ITU, any existing users examining the request must file protests if they suspect harmful interference. The contesting national parties will then, with the assistance of the ITU, seek to resolve possible conflicts. Existing users of radiofrequencies and orbital slots need to be forever vigilant because their rights are subject to interferences. Thus, they may employ private companies, such as HawkEye360, that specialize in finding radio frequency interferences.⁶⁴ Toward that purpose, HawkEye360 will itself launch small satellites to locate any radiofrequency interferences. Other communication companies are also beginning to launch special satellites to detect interference.⁶⁵

In the absence of protests, the ITU will assume that there is no harmful interference. Only at that point can the allocation be recorded in the ITU Master International Frequency Register.⁶⁶ This register of all the assigned radio frequencies with related orbital slots is perhaps the most important ITU institution.

⁶⁴ Debra Werner, *More Than Meets the Eye*, SPACE NEWS MAG. (Aug. 1, 2016), <https://www.spacenewsmag.com/feature/more-than-meets-the-eye/> [https://perma.cc/A6CD-YVTN].

⁶⁵ *Id.*

⁶⁶ Note the multiple registration requirements for small satellites: they must register radiofrequencies with the ITU and separately have their location registered nationally and with the U.N. pursuant to the Registration convention. *See*

It is an open registry, and small satellite operators would be wise to examine the register before making any plans to launch satellites. The actual allocation will be made by the national administration. Thus, the private operator will also be subject to the regulations and decision-making of the national administration.

Getting cleared frequencies and orbital slots may take years, not only because of the multitude of bureaucracies, but also because clearances involve many other countries that may have a claim to particular frequencies and slots.

V. SMALL SATELLITE REMOTE SENSING⁶⁷

The following U.S. small satellite remote sensing and weather companies plan to launch small satellites during the next four years: Blacksky, CICERO, EROS, and Landmapper.⁶⁸ Remote sensing by satellite triggers Outer Space Treaty's article I, which provides that outer space is free for use.⁶⁹ That includes Earth observation. Unrestricted Earth observation previously troubled many countries that wanted to protect their sovereign territories from view by foreign satellites. However, in 1986, the United States and similarly inclined countries managed to persuade those countries to accept the principle of freedom of satellite Earth observation by adopting U.N. Resolution 41/65, containing fifteen principles related to remote sensing.⁷⁰ The Resolution broadly defines remote sensing as "making use of the properties of electromagnetic waves emitted, reflected or diffracted by the sensed objects, for the purpose of improving natural resources management, land use and the protection of the environment."⁷¹ The most profitable remote sensing products are detailed high-resolution images. However, the highest resolution products require more complex and sharper remote sensing equipment than small satellites can presently accommodate.

Countries have adopted all or parts of the U.N. principles in their national legislation. As small satellites sense all of the Earth, they are subject to varying national rules and regulations.

infra section VI, Small Satellites Must Be Registered in their National Registry and in the U.N. Registry.

⁶⁷ See generally LYALL & LARSEN, *supra* note *, Chapter 13: Remote Sensing.

⁶⁸ Karacalioglu, *supra* note 8.

⁶⁹ Outer Space Treaty, *supra* note 28, art I.

⁷⁰ Principles Relating to Remote Sensing of the Earth from Outer Space, G.A. Res. 41/65, U.N. Doc. A/RES/41/65 (Dec. 3, 1986).

⁷¹ *Id.*

In particular, many countries restrict access to their territories for reasons of national security.

Most of the new small satellite operators originate in the United States, which is required by Outer Space Treaty's article VI to authorize and continuously oversee remote sensing operators in accordance with the Outer Space Treaty.⁷² NOAA is the U.S. authorizing and supervising agency. It acts in close coordination with the Department of Defense (DOD) and the USDOS because of the national security aspects and international treaty obligations concerning remote sensing.

U.S. policy favors commercial remote sensing over government-operated sensing.⁷³ Consequently, the U.S. government, through the DOD, the National Geospatial-Intelligence Agency (NGA), and the National Reconnaissance Office (NRO), is a major customer of U.S. commercial remote sensing operators. All small satellite commercial remote sensing operators are required to obtain operating authorization from NOAA.⁷⁴ In order to be licensed, they must submit a detailed business plan to NOAA. Under the statute, the operators must deposit remote sensing data in the U.S. government data archive. The U.S. government audits each remote sensing operator annually to verify compliance with government regulations. An amended license is required if the operator's business, or a part of it, is acquired by a foreign person. NOAA also needs to know about an operator's contracts to sell remote sensing data to foreigners. The U.S. government exercises shutter control over its licensed operators. For example, remote sensing of Israel by U.S. remote sensing operators is prohibited according to U.S. law. Consequently, much is required of the NOAA's small staff, which is presently struggling with the heavy influx of applications from small satellite operators for permission to operate remote sensing small satellites.

⁷² Outer Space Treaty, *supra* note 28, art. VI.

⁷³ 51 U.S.C. § 60134; Exec. Off. of the President, U.S. Commercial Remote Sensing Policy (Apr. 23, 2003) [hereinafter Remote Sensing Policy].

⁷⁴ Remote Sensing Policy, *supra* note 73. Note the frustrations of remote sensing operators who are denied government permission to sense and sell very sophisticated imagery. See Walter Scott, *U.S. Satellite Imaging Regulations Must be Modernized*, SPACE NEWS (Aug. 29, 2016), <http://spacenews.com/op-ed-u-s-satellite-imaging-regulations-must-be-modernized/> [https://perma.cc/2JJ6-AXK4]; see also Jeff Foust, *Not All Regulatory Problems are Equal*, SPACE NEWS MAG. (Sept. 12, 2016), <https://www.spacenewsmag.com/foust-forward/not-all-regulatory-problems-are-equal/> [https://perma.cc/RP7U-BASJ].

VI. SMALL SATELLITES MUST BE REGISTERED IN THEIR NATIONAL REGISTRY AND THE U.N. REGISTRY⁷⁵

The United Nations Registration Convention requires the purpose and orbital location of all satellites to be individually registered, for reason of safety, so other operators can avoid colliding with new satellites in orbit, new operators can safely plan to launch their space objects, and when accidents happen, to determine liability by identifying the involved space objects. Some of the proposed small satellite systems are located in fairly close proximity to each other. In order to avoid conflicts, operators need public information about the orbital slots and frequencies used by other operators. Pursuant to Outer Space Treaty's article VI, the state of registry is likely to be the appropriate state in which to license each satellite and to conduct continuing oversight over all its activities in outer space.⁷⁶

The Registration Convention's articles I, II, and III require small satellites to be registered because they are space objects.⁷⁷ Failure to register or to delay registration of small satellites tends to defeat the purpose of the treaty.⁷⁸ Unregistered satellites are a problem. Currently, seven percent of space objects are not registered.⁷⁹ Universities and amateur small launch operators have in the past often neglected to register because they thought that they were too small and insignificant to be considered space objects. They remain subject to international law regardless of failure to register because registration of small satellites can be considered to be customary international law.⁸⁰

Registration determines which state may exercise jurisdiction and control over a satellite. It also determines issues relating to ownership of a satellite. From a safety point of view, a large infusion of new satellites into outer space makes registration even more urgent. Small space objects are more difficult to track than

⁷⁵ See generally Registration Convention, *supra* note 30; LYALL & LARSEN, *supra* note *, Chapter 4: Space Objects: Control, Registration, Return and Liability – The Treaties and the Practice (see section discussing the U.N. Registration Convention).

⁷⁶ Outer Space Treaty, *supra* note 28, art. VI.

⁷⁷ Registration Convention, *supra* note 30, arts. I–III.

⁷⁸ See 1 COLOGNE COMMENTARY ON SPACE LAW 152 (Hobe et al. eds., 2009).

⁷⁹ Paul B. Larsen, *The Berlin Space Protocol Update*, 64 ZEITSCHRIFT FUER LUFT- UND WELTRAUMRECHT 361, 385 (2015).

⁸⁰ See COLOGNE COMMENTARY ON SPACE LAW, *supra* note 78, at 164; see also Neta Palkovitz & Tanja Masson-Zwaan, *Orbiting under the Radar: Nano Satellites, International Obligations and National Space Laws*, 55 PROC. INT'L INST. SPACE L. 566, 569 (2012).

large space objects. Satellites are continuously tracked by U.S. and Russian military authorities, and by the European Space Agency (ESA), as well as by a handful of other states. However, tracking is expensive. Most states do not have the resources to track satellites. Existing tracking systems, being free and government-operated, cannot be held liable for negligent tracking.

As the Registration Convention is a treaty, the obligations to register satellites rests immediately on governments and their agents. Under the Registration Convention, the launching state is required to register its space objects in an appropriate national registry of space, as well as in the United Nations Registry.⁸¹ The definition of "launching state" is broad. It is defined as the state, which launches, procures the launch, or "from whose territory or facility a space object is launched."⁸² Thus, several states may fit the definition of "launching state" under the Registration Convention, and the various eligible states must "jointly determine which one of them shall register" the space object because only one state may register.⁸³ The national registry is not required to be publicly available; nevertheless, the U.N. Secretary General is required by the treaty to maintain a public registry of all the space objects registered in the national registries.⁸⁴ The launching state is to update the U.N. registry as space objects change orbits or are deorbited.

Virtually all states are parties to Outer Space Treaty's article VIII, which mandates that it is the state in which a satellite is registered that has jurisdiction and control over each individual satellite.⁸⁵ Thus, owners of a satellite may prefer its national state to become the registrant in order to protect ownership. Nevertheless, some satellite operators opt for registration by the most lenient state, the so-called state of convenience. Selection of state of registry also becomes an issue when an individual satellite, or a fleet of satellites, are sold to a party located in another state. As described below in the liability section, the state of the purchaser may be reluctant to accept transfer of registry because that will result in potential liability.⁸⁶ A precedent was set when the Netherlands agreed to register a satellite but declined liability. The Netherlands agreed to register the Triton-1 satellite but

⁸¹ Registration Convention, art. I, *supra* note 30, art. II, para. 1.

⁸² *Id.* art. I(a).

⁸³ *Id.* art. II, para. 2.

⁸⁴ *Id.* art. IV.

⁸⁵ Outer Space Treaty, *supra* note 28, art. VIII.

⁸⁶ See *infra*, Section VII, Liability Issues of Small Satellites.

declined to become a launching state because it did not want to become liable under the Liability Convention.⁸⁷ One author opines that the Netherlands might become liable under the Liability Convention anyway.⁸⁸ A similar problem may arise for a holder of a security interest seeking to foreclose on the security interest for non-payment.⁸⁹

VII. LIABILITY ISSUES OF SMALL SATELLITES⁹⁰

Small satellites are governed both by the liability provisions of Outer Space Treaty's article VII and by the Liability Convention, as well as by customary international liability laws.⁹¹ They are also subject to national laws on liability. The Outer Space Treaty is adopted by all the states involved in outer space activities, and it tends to express customary international law. Thus, it also applies to non-party states. Outer Space Treaty's article VII provides that two different kinds of states, the state from whose territory a satellite is launched or from whose facility a space object is launched, may be held liable for damage caused to another state by both its governmental and non-governmental satellites.⁹²

There is no limit on liability. Most planned small satellites are non-governmental satellites. The consequence of the principle of state liability established by the Outer Space Treaty is that responsible states, which may be held liable for the operations of commercially operated small satellites, are cautious or should be cautious about licensing small satellite operators to do business. On the other hand, flag of convenience states, having few assets and little or no governmental oversight capacity, may take the opportunity to authorize non-government operations over which they have little control or oversight. Considering the multitude of small satellite launches, the liability exposure of states grows commensurably.

⁸⁷ SMALL SATELLITES, REGULATORY CHALLENGES AND CHANGES, *supra* note 1, at 63.

⁸⁸ *Id.*

⁸⁹ Larsen, *The Berlin Space Protocol Update*, *supra* note 79, at 382.

⁹⁰ See Liability Convention, *supra* note 29; see generally LYALL & LARSEN, *supra* note *, Chapter 4: Space Objects: Control, Registration, Return and Liability – The Treaties and the Practice.

⁹¹ Myres S. McDougal, *Artificial Satellites: A Modest Proposal*, 51 AM. J. INT'L L. 75–77 (1957); see *The Corfu Channel Case, Judgment*, 1949 I.C.J. Rep. 1 (Apr. 9); *Trail Smelter Arbitration*, 33 AM. J. OF INT'L L. 182 (1939).

⁹² Outer Space Treaty, *supra* note 28, art. VII.

In addition to being party to Outer Space Treaty's article VII, many states are also parties to the Liability Convention, which broadens the liability exposure of small satellite states. Under the Liability Convention, four different kinds of states are defined as the launching state, and may thus be held severally or jointly liable for damages caused by small space objects. Those are the states that launch or procure launches of space object and states from whose territory or facility space objects are launched.⁹³ State liability under the Liability Convention is also unlimited. Liability for surface damage is strict. Liability is based on proof of fault for damages caused by space objects in outer space.

Outer Space Treaty's article VI authorizing process⁹⁴ is used by governments to protect themselves against potential governmental liability.⁹⁵ Thus, in order to obtain a launch license, non-governmental operators can be and are required to purchase insurance coverage reimbursing the licensing government for damages caused. However, many implementing national laws permit satellite operators to limit the amount of insurance depending on exposure, and on available private insurance. Thus, governments retain considerable exposure to catastrophic liability losses in excess of national liability limits of private operators. Persons killed, injured, or damaged by a foreign space object can only recover under either treaty through action brought on their behalf by a government, usually their own government. No punitive damages are allowed under these two treaties.

The only example of a recovery relating to the Liability Convention is Canada's recovery from the then-Soviet Union in the Cosmos 954 claim, in which a defunct Soviet nuclear satellite caused damage in northern Canada.⁹⁶ No lawsuit was brought by Canada. When presented with the Canadian claims for damages, the then-Soviet Union declined liability but agreed to pay a negotiated compensation settlement in the amount of three million Canadian dollars, which can be construed as recognition of

⁹³ Liability Convention, *supra* note 29, arts. I–III. Note that the most recent treaty obligation prevails. See United Nations Conference on the Law of Treaties, Vienna Convention on the Law of Treaties, 289, U.N. Doc. A/CONF.39/27 (May 23, 1969).

⁹⁴ Outer Space Treaty, *supra* note 28, art. VI.

⁹⁵ Implemented in the United States by the Commercial Space Launch Act, *supra* note 44.

⁹⁶ See *Canada—Union of Soviet Socialist Republics: Protocol on Settlement of Canada's Claims for Damages Caused by "Cosmos 954"*, 20 INT'L LEGAL MATERIALS 689 (1981).

liability. The small compensation recovered in the Cosmos 954 claim, and the wish of individual claimants to control their own lawsuits, may cause an individual claimant to prefer to bring private claims in national courts against small satellite owners for loss and damages incurred because that is permitted by the Outer Space Treaty and the Liability Convention. Thus, foreign claimants may bring claims for damages in American courts having jurisdiction over small satellite companies under state laws. Liability may be unlimited depending on the law of particular U.S. states.

Besides the Outer Space Treaty and the Liability Convention, claims may also be brought under customary international law pursuant to case law, such as the Trail Smelter Arbitration and the Corfu Channel case, both of which concluded that one state may recover damages from another state for damages caused.⁹⁷

Domestic claimants cannot invoke treaty liability rights against small satellite operators of their own nationality for injury and damage caused. They can only bring claims against domestic operators under domestic liability laws. National liability laws on small satellite injury and damage caused in outer space would tend to be based on fault.

Experts point to a greatly increased risk of collisions likely to be caused by the large influx of small satellites.⁹⁸ Administratively, the U.S. government is used to processing a few applications at a time, and one can only speculate about the government reaction to the request of one operator to authorize the launch of 3,800 small satellites.⁹⁹ Governments will seek to shift the increased liability exposure over to private insurance companies. The pool of insurance for outer space activities is rather small and may not be sufficient to accommodate the additional risk. The price of insurance will increase commensurate with the increased risk. The national laws tend to limit private liability exposure, leaving excess exposure to the governments. Thus, the ability of governments to shift the risk exposure over to private insurance companies is limited. Considerable risk exposure will still rest on the government, thus leaving governments with the option to restrict the number of licenses to launch small satellites.

⁹⁷ See The Corfu Channel Case, Judgment, 1949 I.C.J. Rep. 1 (Apr. 9); *Trail Smelter Arbitration*, *supra* note 91.

⁹⁸ Karucaliaglu, *supra* note 8.

⁹⁹ See Weeden, *supra* note 8.

Yet another consequence of the increased risk of collisions in outer space will be the reluctance of governments to agree to register satellites when requested to register titles to satellites being sold to companies in another country.¹⁰⁰ That may result in reluctance to accept registrations.

Regarding possible liability for personal injury and harm to the surface of the Earth, national liability laws tend to follow the example of the Liability Convention and impose absolute liability for small satellite harm to persons and property on the surface of the Earth. This accords with the common law rule established in the 1868 case of *Rylands v. Fletcher*.¹⁰¹ That would also conform with the liability regime of the Rome Convention on aircraft liability for surface damage.¹⁰²

VIII. SPACE DEBRIS AND ENVIRONMENTAL ISSUES¹⁰³

Small satellite operators currently plan to triple the number of operating satellites in Earth's orbit.¹⁰⁴ While each of the additional satellites would be small, they would nevertheless each constitute an additional variable to be taken into account in maintaining order in outer space. Orbital slots and radio frequencies are now recognized to be scarce resources.¹⁰⁵

Non-governmental entities, such as small satellite operators, are subject to international environmental laws.¹⁰⁶ They are subject to generally applicable international environmental laws whether established by treaty or by customary international law. It is also possible that small satellite operators may be subject to the Precautionary Principle, which requires them to exercise caution before acting in order to fully understand their environmental duties so that they do not trigger unexpected environmental dangers.¹⁰⁷ The Principle is primarily used by decision

¹⁰⁰ Larsen, *The Berlin Space Protocol Update*, *supra* note 79, at 384–85.

¹⁰¹ *Rylands v. Fletcher*, L.R.3 H.L. 330 (1868).

¹⁰² Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface, Oct. 7, 1952, 310 U.N.T.S. 181.

¹⁰³ See LYALL & LARSEN, *supra* note *, Chapter 10, Environmental Regulation.

¹⁰⁴ See Karacalioglu, *supra* note 8.

¹⁰⁵ ITU CONSTITUTION, *supra* note 32, art. 44, para. 2.

¹⁰⁶ Outer Space Treaty, *supra* note 28, art. III.

¹⁰⁷ Note the reference to “precautionary measures” in the preface to the Liability Convention, *supra* note 33. See Paul B. Larsen, *Application of Precautionary Principle to the Moon*, 71 J. AIR L & COM. 295, 297 (2006).

makers in assessing and managing risk.¹⁰⁸ The looming Kessler Syndrome relates to the Precautionary Principle and the overarching worry in launching many small satellites into outer space. In 1978, Donald Kessler, then a NASA scientist, predicted a self-sustaining cascade of space debris collisions in LEO.¹⁰⁹ The Kessler Syndrome states that space debris will continue to create more debris as debris cumulatively collide, thus fragmenting into endlessly smaller and more pieces. Increasing space debris will eventually preclude access to outer space and all space business will stop.

Under Outer Space Treaty's Article VI, the parties to the treaty "bear international responsibility" not only for their governmental activities in outer space but also for the activities of their nationals, thus "assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty."¹¹⁰ That also places responsibility on the states to ensure that their non-governmental operators conform to Outer Space Treaty requirements, for example, by acting in outer space with "due regard [for] the corresponding interests" of other states and their non-governmental representatives in using outer space orbital slots.¹¹¹ Such slots must be free from interference by the satellites of other states, and thus not exposed to contaminations from and harmful interferences with present and planned future activities in outer space. The International Court of Justice conclusively validated the due regard principle in the case of *Iceland v. United Kingdom* holding that United Kingdom fishermen had failed to pay due regard to the legal rights of Iceland to declare and reserve an exclusive fisheries zone around Iceland for its fishermen, to the exclusion of United Kingdom fishermen.¹¹² The principle of due regard was adopted in the Law of the Sea Convention.¹¹³

¹⁰⁸ Commission of the European Communities, Communication from the Commission on the Precautionary Principle, at 3, para. 4, COM (2000) 1 final (Feb. 2, 2000).

¹⁰⁹ See Donald J. Kessler & Burton G. Cour-Palais, *Collision Frequency of Artificial Satellites: The Creation of a Debris Belt*, 83 J. OF GEOPHYSICAL RES. 2637 (1978). The Kessler Syndrome predicts a steady increase in debris as old debris constantly collides with other debris breaking into increasingly smaller fragments, consequently resulting in a drastically rising statistical collision curve.

¹¹⁰ Outer Space Treaty, *supra* note 28, art. VI.

¹¹¹ See *id.* art. IX.

¹¹² Fisheries Jurisdiction (U.K. v. Ice.), 1974 I.C.J. 3 (July 25).

¹¹³ See United Nations Convention on the Law of the Sea, art. 87, para. 2, Dec. 10, 1982, 1833 U.N.T.S. 396.

In a larger sense, it may be argued that a large influx of new small satellites from one state will reduce the opportunities of satellite operators of other states to use outer space. In a narrower sense, the many small satellites arguably will prevent the plans of other countries, in particular the economically less developed countries, to use specific orbits and frequencies.¹¹⁴ The Outer Space Treaty's article IX concern with causing "harmful interference with activities of other States Parties in the peaceful exploration and use of outer space"¹¹⁵ leads to discussion of space debris and the adverse consequences of the frequent space debris caused by the short nine to eighteen month durability of small satellites. For example, renewal of the estimated fleet of 3,800 small satellites may necessitate replacement of 1,000 small satellites each year. Usually launched in LEO, most of their debris will deorbit in rather short time. That means that a lot of space debris will enter the atmosphere. Not all of it may burn during its descent through the atmosphere; some may rain down on the surface of the Earth. Either way it will cause pollution.¹¹⁶

Launch and operation of small satellites will be subject to the U.N. Committee on the Peaceful Uses of Outer Space (COPUOS) space debris guidelines approved by the 2007 United Nations General Assembly Resolution 62/217.¹¹⁷ These guidelines have become mandatory rules by adoption as national regulations by the individual national states. Thus, the launch licenses for small satellites issued by a national state¹¹⁸

¹¹⁴ See Outer Space Treaty, *supra* note 28, art. I ("use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind."); see also ITU CONSTITUTION, *supra* note 32, art. 44, para. 2 (regarding use of radiofrequencies and orbital slots "taking into account the special needs of the developing countries and the geographical situation of particular countries.").

¹¹⁵ Outer Space Treaty, *supra* note 28, art. IX.

¹¹⁶ See Search and Rescue Agreement, *supra* note 31, art. 5, para. 4 (requiring the launching state, under the direction of the affected state, to eliminate possible harm to the affected state from space debris.).

¹¹⁷ G.A. Res. 62/217, ¶ 26, U.N. Doc. A/RES/62/217 (Feb. 1, 2008).

¹¹⁸ See 51 U.S.C.A. § 31501. NASA has the lead in organizing U.S. regulations on space debris, and NASA has adopted the following rule:

Requirement 4.6-1. Disposal for space structures in or passing through LEO: A spacecraft or orbital stage with a perigee altitude below 2,000 km shall be disposed of by one of the following three methods: (Requirement 56557)

a. Atmospheric reentry option: (1) Leave the space structure in an orbit in which natural forces will lead to atmospheric reentry within

sets the following rules¹¹⁹ for government authorizations to launch:

- (a) The operator must build each individual satellite so as to produce as few fragments as possible and to drop launch debris close to the launch station.¹²⁰
- (b) The operator must minimize the potential for break-ups during the operational phases. This requires special design as well as ability to avoid obstacles in outer space. Application of this rule depends on whether the small satellite is operational so as to be steered around other satellites and space debris.¹²¹
- (c) The operator must limit the probability of accidental collisions in space. This requires navigability. Small satellites that cannot be navigated around other space objects in outer space may thus not be authorized.¹²²
- (d) The operator must avoid intentional destruction in outer space. Whenever destruction is necessary, it should be conducted at low altitude where space debris can deorbit quickly. This rule requires that there be sufficient fuel on board to move the satellite, as well as to control navigation.¹²³
- (e) The operator must convincingly prove to the licensing authorities that all energy sources on board the satellite in orbit can be depleted or vented before post-mission break-up. This will avoid explosions and fragments of debris.¹²⁴
- (f) The operator must either remove defunct satellites from orbit after mission completion or bring them into proximity to

25 years after the completion of mission but no more than 30 years after launch; or (2) Maneuver the space structure into a controlled de-orbit trajectory as soon as practical after completion of mission

b. Storage orbit option: Maneuver the space structure into an orbit with perigee altitude greater than 2000 km and apogee less than GEO - 500 km.

c. Direct retrieval: Retrieve the space structure and remove it from orbit within 10 years after completion of mission.

Nat'l Aeronautics and Space Admin., STD 8719.14A, Process for Limiting Orbital Debris (2011), *available at* <https://www.hq.nasa.gov/office/codeq/doctree/871914.pdf> [<https://perma.cc/9H8L-2V9K>] [hereinafter NASA, STD 8719.14A].

¹¹⁹ INTER-AGENCY SPACE DEBRIS COMMITTEE, *IADC Space Debris Mitigation Guidelines*, IADC-02-01 (Sept. 2007) (rev. 1) [hereinafter *IADC Guidelines*]. The COPUOS work on space debris guidelines was based on preparatory work and coordination within the Inter-Agency Space Debris Coordination Committee.

¹²⁰ *Id.* at 8.

¹²¹ *Id.* at 8–9.

¹²² *Id.* at 10.

¹²³ *Id.* at 9.

¹²⁴ *Id.* at 8.

Earth (LEO) for de-orbit. The Interagency Space Debris Coordination committee (IADC) recommended that such debris be removed from LEO within twenty-five years.¹²⁵ The United States follows this rule.¹²⁶

- (g) In executing de-orbit, satellite operators should be aware that de-orbiting space debris may cause damage and may adversely affect the Earth's environment. Because small satellites are designed to last only nine to eighteen months, and because they orbit in LEO, the chance of small satellite fragments reaching the surface of the Earth is significant. The frequency of de-orbits increases chances of environmental pollution, injury, and property damage. Small satellite operators should ensure that space debris does "not pose an undue risk to people or property" on Earth.¹²⁷
- (h) Satellites located in high GEO orbits, which cannot easily be de-orbited post-mission, should be placed in graveyard orbits where they cannot cause interference. Thus, satellite operators need to leave sufficient fuel onboard to move satellites out of GEO into yet higher orbit. At this point in time, few small satellites are planned to be high orbits, so this may not be a significant problem for small satellites.¹²⁸

One of the space law treaties, The Agreement on Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, specifically addresses the earthly environmental problems of de-orbited space debris. Article 5 of the treaty provides that a state, which finds within its borders space debris "of a hazardous or deleterious nature may so notify the launching authority, which shall immediately take effective steps, under the direction and control of the said Contracting Party, to eliminate possible danger of harm."¹²⁹ The launching state is responsible for the cost associated with the removal. The treaty's definition of the liable "launching state" is narrow. It refers only to the state or international organization responsible for the launching.¹³⁰

The estimate that "from 2036 collisions [will] start to occur regularly" and that there will then be a rapidly increasing number of collisions and near-collisions with space debris is trouble-

¹²⁵ *Id.* at 9–10.

¹²⁶ See NASA, STD 8719.14A, *supra* note 118, sec. 4.3.2.1.

¹²⁷ IADC Guidelines, *supra* note 119, at 10.

¹²⁸ *Id.* at 9.

¹²⁹ Search and Rescue Agreement, *supra* note 31, art. 5, para. 4.

¹³⁰ *Id.* art. 6. The 1968 Rescue and Return Agreement's definition of launching state is more narrow than the much broader definition of launching state in the 1971 Liability Convention, thus its application is smaller.

some.¹³¹ Space debris remains a major problem for small satellites because of their multitude and rapid replacements. This estimate accords with past production of space debris and is in line with the Kessler Syndrome. Such debris development would cause governments to hesitate to grant launch authorizations to a large number of applicants. The applicants will have to convince the authorizing governments that they will strictly follow the COPUOS space debris guideline to limit the orbital life spent in LEO to twenty-five years.¹³² Nevertheless, one expert suggests that it will be necessary to reevaluate the adequacy of the twenty-five year de-orbit rule based on actual experience and further modeling.¹³³ From the point of view of governmental regulatory agencies, considering the huge number of small satellites being planned, the environmental issues may well be the most serious issue. ESA's chief space debris expert said that it would be "totally insane" to allow an increase in the present level of space debris by adding large numbers of small satellites to outer space.¹³⁴

IX. PUBLIC SAFETY EFFECTS OF SMALL SATELLITES¹³⁵

Outer space lacks basic space traffic management. The extreme speed with which space objects move in outer space makes navigation extremely hazardous. Constant tracking of all space objects at all times is important for several reasons.¹³⁶ Tracking and operators' self-interest in avoiding accidents are the major ways of managing traffic in outer space. The U.S. Air Force tracks all active satellites, as well as large space debris.¹³⁷ The Air Force currently tracks 21,000 space objects, including

¹³¹ Karucalioglu, *supra* note 8.

¹³² See Jeff Foust, *Smallsat Operators Have Yet to Allay Concerns about Space Junk*, SPACE NEWS (June 24, 2015), <http://spacenews.com/smallsat-operators-have-yet-to-allay-concerns-about-space-junk/> [https://perma.cc/G4C4-43RX].

¹³³ Karucalioglu, *supra* note 8.

¹³⁴ 2016 IAC Panel Discussion, *supra* note 25 (remarks by H. Krag, Head of ESA Space Debris Office); see also Morring, *Collision Course*, *supra* note 25. This is also the author's personal recollection from the conference.

¹³⁵ See generally Paul B. Larsen, *Outer Space Traffic Standards*, PROC. 6TH IAASS CONF., (2013), available at http://articles.adsabs.harvard.edu/cgi-bin/nph-iarticle_query?db_key=AST&bibcode=2013ESASP.715E..27L&letter=E&classic=YES&defaultprint=YES&whole_paper=YES&page=27&epage=27&send=Send+PDF&filetype=.pdf [https://perma.cc/U6R6-NT2C].

¹³⁶ See Mike Gruss, *Good (Space) Fences Make for Good (Orbital) Neighbors*, SPACE NEWS (Sept. 19, 2016), <http://spacenews.com/good-space-fences-make-for-good-orbital-neighbors/> [https://perma.cc/Q5B7-4D58].

¹³⁷ *Id.*

space debris. A new Space Fence tracking system is being built and is planned to be operational in 2018.¹³⁸ It will provide the Air Force with ten times better accuracy, precision, and timeliness.

The Air Force is willing to share non-military information with civilian operators. Small satellite operators depend on the Air Force for information about possible dangers, and for space situational awareness. Thus, the public safety relationship with the Air Force is important. However, military security is the main focus of the Air Force; a tracking service for the civilian sector is secondary and incidental. Currently, the Science and Policy Institute is studying various ways to transfer the function of warning civilian satellites of possible interferences and collisions based on tracking by the Air Force to the FAA.¹³⁹

Small satellites orbit mainly in LEO. The International Space Station (ISS) is located in LEO. Virgin Galactic and Blue Origin are now planning tourist flights into LEO. This is the space through which all satellites must ascend and de-orbit after flight in outer space. Space debris is also concentrated in LEO. So, LEO constitutes a crowded dangerous mix of traffic where public safety is a significant issue.¹⁴⁰

The novelty and large number of small satellites to be launched in outer space raises additional public safety concerns. Some small satellites are presently not navigable and cannot be steered around other space objects, including space debris. The danger of collision is particularly acute when encountering non-navigable space debris. The 2009 collision in LEO of an Iridium satellite and a defunct Russian Cosmos satellite, which could not navigate,¹⁴¹ shocked the world into sharper awareness that outer space needs better space traffic management. Awareness of the need for public safety in outer space motivated the 2009 U.S.

¹³⁸ See *id.*

¹³⁹ Both the Air Force and the FAA favor such a transfer. See Jeff Foust, *FAA Pins Price on Taking on Space-Traffic Job*, SPACE NEWS MAG. (Nov. 7, 2016), <https://www.spacenewsmag.com/feature/faa-pins-price-on-taking-on-space-traffic-job/> [<https://perma.cc/3VLH-ALPG>]. Private businesses are also now offering collision-warning services. See Debra Werner, *Congestion Could be Good for Business*, SPACE NEWS MAG., (Nov. 7, 2016), <https://www.spacenewsmag.com/feature/congestion-could-be-good-for-business/> [<https://perma.cc/E4GT-JQBW>].

¹⁴⁰ Note the space debris rules to limit the presence in LEO as much as possible, *supra* notes 118 and 119.

¹⁴¹ Frans G. von der Dunk, *Too-Close Encounters of the Third Kind: Will the Liability Convention Stand the Test of the Cosmos 2251-Iridium 33 Collision?*, in PROC. INT'L INST. SPACE L. 2009 199 (2010).

policy that the United States would begin to “cooperate with interagency, international, and commercial partners to define and promote safe and responsible space operations.”¹⁴²

Public safety is an objective of international space law. Outer Space Treaty article VI makes states responsible for non-governmental satellite operations in outer space.¹⁴³ The national states use the authorizing process to compel small satellite operators to construct and operate satellites safely. Public safety is not only “in the interest of all countries,”¹⁴⁴ it is also part of paying “due regard”¹⁴⁵ to the corresponding interests of all the states to be safe in the dangerous outer space environment. Outer Space Treaty’s article III incorporates the U.N. Charter’s national security provisions and makes public safety provisions of other international law applicable for the operation of all satellites.¹⁴⁶

Public safety is at the heart of the Search and Rescue Convention, the objectives of which are rescue and return of lost space objects and limitation of the impact on the Earth’s surface of “hazardous and deleterious” debris from space objects.¹⁴⁷ Public safety is also the objective of the Registration Convention, the purpose of which is to alert all satellite operators to the location of satellites so as to prevent collisions.¹⁴⁸ Early launches of experimental small satellites were not registered because the Netherlands and Belgium did not consider themselves as launching states.¹⁴⁹ Non-registration of small satellites has adverse effect on public safety, particularly as the volume of small satellites increases greatly as planned.¹⁵⁰ Failure to register frustrates identification of launching states whose satellites have caused injury and damage.¹⁵¹

ITU has a significant stake in outer space public safety. Satellites, including small satellites, cannot function in outer space without cleared radiofrequencies and orbital slots. It is the purpose of the ITU legal regime to establish interference-free radiofrequencies that can be used to navigate space objects and to

¹⁴² U.S. Dep’t of Def., Directive 3100.10, Space Policy 2 (Oct. 18, 2012).

¹⁴³ Outer Space Treaty, *supra* note 28, art. VI.

¹⁴⁴ *Id.* art. I.

¹⁴⁵ *Id.* art. IX.

¹⁴⁶ *Id.* art. III.

¹⁴⁷ Search and Rescue Convention, *supra* note 31, arts. I–V.

¹⁴⁸ *See* Registration Convention, *supra* note 30, pmbl.

¹⁴⁹ Palkovitz & Massoon-Zwaan, *supra* note 80, at 571–572, 574.

¹⁵⁰ *See supra* Section VI, Small Satellites Must Be Registered In Their National Registry and the U.N. Registry.

¹⁵¹ Registration Convention, *supra* note 30, art. VI.

assign orbits so that satellites will be able to operate safely and avoid collisions. Safety of space objects is under discussion in the United Nations Committee for Peaceful Uses of Outer Space.¹⁵² It is also discussed in the International Civil Aviation Organization (ICAO) due to its concern with the transit of space objects through air space.¹⁵³

X. SMALL SATELLITE NATIONAL SECURITY ISSUES

Outer space is the proverbial high ground favoured by the old Chinese military strategist, Sun Tzu, in *The Art of War*.¹⁵⁴ Use of the significant kinetic energy derived from the high speed of space objects is a temptation.¹⁵⁵ The three military space powers—the United States, Russia, and China—are engaged in intense competition for military dominance of outer space.¹⁵⁶ In this competitive environment, small satellites are increasingly being considered for military uses. Small satellites have military advantages over large satellites. They can be built very quickly and cheaply and they can be deployed rapidly as need arises.¹⁵⁷

Small satellites are used for military communication.¹⁵⁸ They can be used to probe other satellites in space. The U.S. Defense Advanced Research Projects Agency (DARPA) has resolved that small satellites can be used for military reconnaissance. DARPA's SEEME small satellite program is planning a constellation of twenty-four small reconnaissance satellites.¹⁵⁹ It is also thought that small satellites could be useful in countering Intercontinental Ballistic Missiles (ICBMs).¹⁶⁰ Small satellites have

¹⁵² Press Release, Comm. on the Peaceful Uses of Outer Space, U.N. Outer Space Comm. Closes with a Focus on the Future, U.N. Press Release UNIS/OS/470 (June 21, 2016), available at <http://www.unis.unvienna.org/unis/en/pressrels/2016/unisos470.html> [<https://perma.cc/RSP8-T9RJ>].

¹⁵³ Convention on International Civil Aviation, art. 3, para. (d), art. 10, Dec. 7, 1944, 15 U.N.T.S. 295 (establishing the ICAO, which sets standards for air space navigation).

¹⁵⁴ SUN TZU, *THE ART OF WAR* (Lionel Giles ed., 1994).

¹⁵⁵ *Technology Quarterly*, *supra* note 8.

¹⁵⁶ LYALL & LARSEN, *supra* note *, at 508–09; see also Paul B. Larsen, *Outer Space Arms Control: Can the USA, Russia and China Make This Happen?*, J. CONFLICT SECURITY L., June 20, 2017, <https://doi.org/10.1093/jcsl/krw026>.

¹⁵⁷ Terry C. Wallace, *The Cubesat Security Edge*, AVIATION WK. & SPACE TECH., Oct. 10, 2016, at 58.

¹⁵⁸ The Iridium Satellite Constellation operates seventy-two small satellites in LEO. DOD contracts with Iridium for satellite communication services.

¹⁵⁹ SMALL SATELLITES, REGULATORY CHALLENGES AND CHANGES, *supra* note 1, at 292 (describing DARPA's SEEME Satellite Solution Technical Revolution).

¹⁶⁰ *Technology Quarterly*, *supra* note 8.

much in common with missiles in that “[t]hey share many of the same kind of seekers and sensors, [and] guidance computers.”¹⁶¹

Small satellites may be used in anti-satellite (ASAT) programs.¹⁶² Very small ASAT satellites may not be clearly identifiable, and thus not trackable from Earth. A stealthy small satellite could be used to destroy space objects without being detected. In this context, an influential U.S. military strategist is reportedly of the view that aggression in outer space is more advantageous than defense. *The Economist* magazine reports, “[a]s Doug Loverro, America’s Deputy Assistant Secretary of Defense for Space Policy, puts it, space is an environment which, at the moment, [favors] attack over [defense].”¹⁶³ This strategist states that because small satellites can be launched quickly to replace military hardware that has been destroyed or lost in outer space, sufficient launch capability and satellites should be kept in reserve and ready to launch such replenishments.¹⁶⁴

Military operations in outer space are becoming increasingly complex and challenging. There are many space objects, both large and small satellites, as well as space debris, which require constant tracking by the U.S. Air Force.¹⁶⁵ Tracking and maneuverability are required to avoid other space objects and space debris. Civilian small satellites have military characteristics. Much remote sensing by civilian small satellites has both military and civilian value. They are classified as dual use because the technology of which they are made can be used for both military and civilian purposes. Therefore, they are subject to both international and unilateral national import and export restrictions.

The Missile Technology Control Regime (MTCR) was adopted in 1987 to restrict the spread of materials that can be used to deliver weaponry including weapons of mass destruction.¹⁶⁶ Thirty-five states are MTCR members, including both

¹⁶¹ Mike Gruss, *Getting a (Robotic) Hand on Smallsats*, SPACE NEWS MAG. (Aug. 15, 2016), <https://www.spacenewsmag.com/feature/getting-a-robotic-hand-on-small-sats/> [https://perma.cc/2SAU-YM65] (The U.S. company Raytheon, as part of its contract with DARPA, builds SEMEE small killer satellites to eliminate intercontinental ballistic missiles.).

¹⁶² *Technology Quarterly*, *supra* note 8.

¹⁶³ *Id.*

¹⁶⁴ *Id.*

¹⁶⁵ See Gruss, *Good (Space) Fences*, *supra* note 136 (describing the greatly improved Air Force tracking system).

¹⁶⁶ See generally LYALL & LARSEN, *supra* note *, at 461.

the United States and Russia.¹⁶⁷ The MTCR has established two categories of guidelines.¹⁶⁸ Category I is the most restrictive. Items on this list are so dangerous that denial of export license is presumed, unless proved otherwise. Category II is less restrictive. Permission to export and import items on this list is granted on a case-by-case examination of the application. For compliance, the MTCR depends on self-enforcement by the member states, which adopt domestic laws and regulations enforcing the MTCR.¹⁶⁹

International trade of small satellites was further restricted in 1995, when a global spread of countries entered into yet another voluntary arrangement to curb the export of arms and military materials, and to promote non-proliferation of nuclear weapons.¹⁷⁰ The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies is a multilateral export control regime. The arrangement has nine lists of restricted military items. List number nine lists spacecraft and their payloads.¹⁷¹ Transparency is the main feature of this arrangement. The Wassenaar states have agreed to inform each other about any international transactions regarding the 300 items listed.¹⁷²

Yet another restriction on trade in weaponry is based on Article 7 of the U.N. Charter.¹⁷³ The U.N. Security Council has adopted universally binding rules requiring states to adopt and enforce regulations prohibiting the export of weapons of mass destruction.¹⁷⁴ Violations are punishable by criminal sanctions.¹⁷⁵ This resolution also restricts trade in dual use small satellites.¹⁷⁶

¹⁶⁷ *MTCR Partners*, MISSILE TECH. CONTROL REGIME, <http://mtcr.info/partners/> [<https://perma.cc/DX8B-PXT5>].

¹⁶⁸ See LYALL & LARSEN, *supra* note *, at 461.

¹⁶⁹ See, e.g., International Traffic in Arms Regulations, 22 C.F.R. §§ 120–130 (2016).

¹⁷⁰ *About Us*, WASSENAAR ARRANGEMENT, <http://www.wassenaar.org/about-us/> [<https://perma.cc/J462-VM7B>].

¹⁷¹ List of Dual-Use Goods and Technologies and Munitions List, WA-LIST (16) 148 (2016), <http://www.wassenaar.org/wp-content/uploads/2016/12/WA-LIST-16-1-2016-List-of-DU-Goods-and-Technologies-and-Munitions-List.pdf> [<https://perma.cc/9MHE-MY38>].

¹⁷² See WASSENAAR ARRANGEMENT, *supra* note 170.

¹⁷³ U.N. Charter art. 7, ¶ 1.

¹⁷⁴ S.C. Res. 1540 (Apr. 28, 2004).

¹⁷⁵ *Id.* ¶ 3(d).

¹⁷⁶ See *id.* ¶ 1.

The European Union (EU) has legal authority to regulate the trade of all the member countries.¹⁷⁷ This authority may be used to implement and enforce the MTCR and Wassenaar regimes. The EU Council of Ministers has adopted EU trade restrictions on all dual use items that may be used to make and deliver weapons of mass destructions. Therefore, the EU, in Council Regulation (EC) No. 428/2009, adopted EU-wide export policy on dual use items manufactured and produced within the EU and also dual use items that originate in a non-EU country and are intended for further export via the EU to other countries. This EU regulation may also affect transfer of dual use items within the EU from one member state to another member state. The EU restricts export authorization for transfer of such dual use items to any country that is on any U.N. or E.U. arms embargo list. Thus, small satellites are subject to the EU Council Regulation No 428/2009 adopted in 2009, as subsequently amended.

The U.S. International Traffic in Arms Regulations (ITARs) are an example of national regulation of intentional trade in small satellites.¹⁷⁸ The ITARs implement the 1999 U.S. Arms Export Control Act.¹⁷⁹ The effect of the legislation was to prioritize U.S. national security of U.S. international trade.¹⁸⁰ The ITARs regulate export licenses for all items on the official U.S. Munitions List.¹⁸¹ Many materials used to build space objects are on that list because they are dual use. Items on the Munitions List may not be shared with non-U.S. persons, except by special U.S. government permission.¹⁸² The export restrictions include re-export to third countries. Administrative authority is vested in the DOS.¹⁸³ The DOD must approve DOS export licenses with the U.S. Customs Service responsible for enforcement.¹⁸⁴ Under the 1999 legislation, the President may waive trade restrictions if that is in the U.S. national interest.¹⁸⁵ In consequence of the 1999 US Arms Export Control Act, as implemented by the ITARs, U.S. trade in global space trade declined drastically from

¹⁷⁷ See SMALL SATELLITES, REGULATORY CHALLENGES AND CHANGES, *supra* note 1, at 295–304.

¹⁷⁸ See 22 C.F.R. §§ 120–30 (2016).

¹⁷⁹ *Id.* § 120.1; LYALL & LARSEN, *supra* note *, at 463.

¹⁸⁰ LYALL & LARSEN, *supra* note *, at 463.

¹⁸¹ 22 C.F.R. § 120.2.

¹⁸² See *id.* § 123.1.

¹⁸³ *Id.* § 120.1.

¹⁸⁴ *Overview of U.S. Export Control System*, STATE.GOV, <https://www.state.gov/strategictrade/overview/> [<https://perma.cc/3CEF-H8MC>].

¹⁸⁵ Arms Export Control Act, 22 U.S.C.A. § 2778 (West 2017).

63% to 30%.¹⁸⁶ Subsequently, the Obama Administration decided to move most space technology off the restrictive Munitions List.¹⁸⁷ Instead, they will be subject to the less restrictive Department of Commerce Export Administration Regulations (EARs).¹⁸⁸ The revised export regulations entered into force on December 31, 2016.¹⁸⁹ Notably, the new export regulations for space technology will not lift the trade restrictions on export of space technology to China.¹⁹⁰

XI. CONCLUSION

The energy and enthusiasm for burgeoning small satellite technology easily leads to demand for immediate conversion to and unrestricted use of this technology, regardless of existing international and national laws and regulations. However, an attitude of disregard for the Outer Space Treaty, and other international and national space laws, could adversely affect the conversion to small satellite technology.¹⁹¹ Small satellites will have to accommodate to the confines of the outer space environment. For example, the multitude of small satellites involves real danger of increasing the space debris problem, which is regulated by both the international space debris guidelines and the national space debris rules with which small satellites are presently struggling. It would not be in the interest of small satellite technology to disregard this danger, which the Kessler Syndrome predicts could foreclose all satellites from using outer space.

¹⁸⁶ David F. Melcher, *Tick Tock*, SPACE NEWS MAG. (Oct. 10, 2016), <https://www.spacenewsmag.com/my-take/tick-tock/> [https://perma.cc/M6EA-56XY].

¹⁸⁷ National Defense Authorization Act for Fiscal Year 2013, Pub. L. No. 112-239, § 1269 (2013); see Revisions to the Export Administration Regulations (EAR): Control of Spacecraft Systems and Related Items the President Determines No Longer Warrant Control Under the United States Munitions List (USML), 79 Fed. Reg. 27,418, 27,418–419 (May 13, 2014).

¹⁸⁸ Department of Commerce Export Administration Regulations EARs, 15 C.F.R. § 730 et seq. (2016).

¹⁸⁹ Amendment to the International Traffic in Arms Regulations: Revisions of U.S. Munitions List Category XII, 81 Fed. Reg. 70,340, 70,341 (Oct. 12, 2016).

¹⁹⁰ Pub. L. 112-239 § 1269; see David M. Ewalt, *Obama Drops Satellite Band, Gives Aerospace Industry a Lift*, FORBES (Jan. 4, 2013), <https://www.forbes.com/sites/davidewalt/2013/01/04/obama-drops-satellite-ban-gives-aerospace-industry-a-lift/#4369eef019aa> [https://perma.cc/K3ZA-PF3S].

¹⁹¹ See Jason Andrews, *Time for Smallsats to Grow Up and Take Responsibility*, SPACE NEWS MAG. (Aug. 1, 2016), <https://www.spacenewsmag.com/commentary/time-for-smallsats-to-grow-up-and-take-responsibility/> [https://perma.cc/88M3-RVA2].

Furthermore, there is a recognized scarcity of radiofrequencies and orbital slots, particularly in the congested areas such as LEO and GEO.¹⁹² The ITU legal regime exists to keep order and will ration these scarce resources. The international regime in turn is administered by member states according to individual national rules such as the FCC regulations. The international and national rules cannot be disregarded. Thus, some patience on the part of the small satellite industry is advisable.¹⁹³

On the other hand, there is room for the legal regime to adjust and be responsive to the booming small satellite activity. One of the earliest accommodations may well be to expedite the multitude of applications for small satellites. For example, NOAA, which issues licenses for remote sensing satellites, is known to be short of staff to handle the many applications from small satellite operators. NOAA needs resources to process applications and to coordinate individual applications with the DOD and USDOS.¹⁹⁴ The FAA also needs resources to process and coordinate a multitude of applications for launches.

National applications to the FCC for radio frequencies to navigate each individual small satellite, to locate orbital slot locations, and to process and license small satellites to broadcast to and from the United States takes considerable staff time, particularly because that may require further international coordination with the ITU. Thus, both the FCC and the ITU need more resources to handle the additional work. Staffing and expedition of service is a budget issue, which can be resolved by additional funding of Congressional appropriations.

The Outer Space Treaty's article VI requires governmental oversight over satellite activities in outer space.¹⁹⁵ The FAA can authorize launches and reentry but lacks legal authority to regulate activities of nongovernmental entities in outer space itself. The 2015 U.S. Space Launch Competitiveness Act requires study of U.S. legislation with the object of giving the U.S. government such regulatory authority in accordance with the standards of the Outer Space Treaty.¹⁹⁶ Speedy adoption of new oversight

¹⁹² Ram Jakhu, *Legal Issues of Satellite Telecommunications, the Geostationary Orbit, and Space Debris*, 5 *ASTROPOLITICS* 173, 175 (2007).

¹⁹³ See Andrews, *supra* note 191.

¹⁹⁴ See *supra* notes 43, 44.

¹⁹⁵ See Outer Space Treaty, *supra* note 28.

¹⁹⁶ See U.S. Commercial Space Launch Competitiveness Act, Pub. L. No. 114-90, § 108 (2015).

legislation is recommended to implement treaty obligations and to accommodate and prevent conflicts involving space objects.

New international space treaties are particularly time-consuming to negotiate, and recently states have resorted to use of so-called “soft law” to regulate new problems. Thus, COPUOS adopted the space debris guidelines, which are particularly important to small satellites and which have been adopted by states as binding regulations. Clearly, COPUOS is going to have to adopt new international small satellite soft law guidelines on traffic management in LEO.¹⁹⁷ Other international coordination will be required to accommodate small satellites.¹⁹⁸

The multitude of international and national outer space priorities need to be accommodated. Human activities in outer space must be safe. The ISS is in LEO. Astronauts in the ISS and in the process of going to and from the ISS must be protected from collision with debris, as well as with other space objects. The national security activities in outer space continue to take precedence over commercial activities. Military outer space users are increasing. Scientific activities are also increasing. Global warming restrictions established pursuant to the Paris Agreement¹⁹⁹ must be administered and policed, and remote sensing satellite resources must be dedicated to disaster relief under the U.N. Disaster Charter.²⁰⁰

Given that the technological change from a few large satellites to a multitude of small satellites is coming, the biggest issue will be how to fit the new technology into the space environment; control of space debris and safety of satellite traffic are absolutely essential for the success of this change in technology. The need for space situational awareness, transparency, and traffic management in LEO are growing. The small satellite industry maintains that it will comply with the COPUOS space debris

¹⁹⁷ The U.S. government favors an international code of safe traffic management. See Directive 3100.10, *supra* note 142; 2016 IAC Panel Discussion, *supra* note 25 (remarks by Professor Hobe).

¹⁹⁸ See Andrews, *supra* note 191; Brian Weeden, *Time For the U.S. Military to Let Go of the Civil Space Situational Awareness Mission*, SPACE NEWS (Sept. 20, 2016), <http://spacenews.com/time-for-the-u-s-military-to-let-go-of-the-civil-space-situational-awareness-mission/> [<https://perma.cc/63V5-H9NE>].

¹⁹⁹ See Paris Agreement, art. 2, para. 1, Dec. 15, 2015.

²⁰⁰ See Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disaster, Rev. 3 (Apr. 25, 2000); Paul B. Larsen, *The Oso Landslide: Disaster Management Law in the Space Age*, 40 WM. & MARY ENVTL. L. & POLY. REV. 335 (2016).

guidelines, including the twenty-five year de-orbit rule.²⁰¹ Such compliance may not be sufficient. The space debris guidelines may need to be further strengthened in order for the small satellite revolution to succeed.²⁰²

²⁰¹ 2016 IAC Panel Discussion, *supra* note 25 (statement by M. Lindsay, representing OneWeb Ltd.).

²⁰² Karucalioglu, *supra* note 8; *see also* 2016 IAC Panel Discussion, *supra* note 25 (statement by H. Krag, Head of ESA Space Debris Office).



ORDERING THE COSMOS: PRIVATE LAW AND CELESTIAL PROPERTY RIGHTS

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ABSTRACT

The Spurring Private Aerospace Competitiveness and Entrepreneurship Act of 2015 (SPACE Act)¹ aims to promote wealth creation by guaranteeing protection of U.S. citizens' property rights to celestial resources. But there are serious concerns that government protection of space property claims are incompatible with international law. This article proposes a purely private legal system for space commerce as an alternative to government-defined and enforced property rights. Economic theory shows how property rights and rules for adjudicating disputes can be self-enforcing. Economic history shows that such a system has worked well for centuries in international trade. A private legal commercial order for space is thus both feasible and desirable.

I. INTRODUCTION

THE SPACE ACT was signed into law by President Obama on November 25, 2015. Since then, several provisions of the act have been the subject of controversy in policy and scholarly circles. Of particular importance is 51 U.S.C. § 51302, which instructs the executive branch to “promote the right of U.S. citizens to engage in commercial exploration for and commer-

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¹ Spurring Private Aerospace Competitiveness and Entrepreneurship Act, Pub. L. No. 114-19, 129 Stat. 704 (2015) [hereinafter SPACE Act].

cial recovery of space resources free from harmful interference, in accordance with the international obligations of the United States and subject to authorization and continuing supervision by the Federal Government.”² While the text appears to guarantee private property rights to celestial resources, it is unclear to what extent this guarantee is compatible with the international obligations of the United States, indicated in Article II of the Outer Space Treaty.³

Under international law, states are sovereign and may define and enforce property rights within their territories. In outer space, the situation is different. No state may extend its sovereignty to outer space, as enshrined in the Outer Space Treaty, which has been signed by the United States and all other spacefaring nations. Article II of this treaty reads, “Outer space, including the moon and celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.”⁴ This may also prevent private citizens from appealing to their governments to defend property rights to celestial resources.⁵ As White⁶ points out, “in common law countries such as the United States, legal theory dictates that the government must have sovereignty over territory before it can confer title on its citizens. Consequently, traditional real property rights [in outer space] are inconsistent with this theory.”

More recently, Tronchetti⁷ echoed White’s⁸ concerns:

The Space Resource Exploration and Utilization Act appears to collide with numerous provisions of the Outer Space Treaty. Par-

² 51 U.S.C. § 51302 (a)(3).

³ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 [hereinafter Outer Space Treaty].

⁴ Outer Space Treaty, *supra* note 3, art. 2.

⁵ Virgiliu Pop, *Appropriation in Outer Space: The Relationship Between Land Ownership and Sovereignty on the Celestial Bodies*, 16 SPACE POLICY 275, 280–81 (2000); James E. Dustan, *Towards a Unified Theory of Space Property Rights: Sometimes the Best Way to Predict the Weather is to Look Outside*, in SPACE: THE FREE MARKET FRONTIER 223, 223–41 (Edward L. Hudgins ed., 2002); Wayne White, *The Legal Regime for Private Activities in Outer Space*, in SPACE: THE FREE MARKET FRONTIER 83, 83–111 (E.L. Hudgins ed., 2002); Sarah Coffey, *Establishing a Legal Framework for Property Rights to Natural Resources in Outer Space*, 41 CASE W. RES. J. INT’L L. 119, 139–42 (2009).

⁶ See White, *The Legal Regime*, *supra* note 5, at 84.

⁷ Fabio Tronchetti, *The Space Resource Exploration and Utilization Act: A Move Forward or a Step Back?*, 34 SPACE POL’Y 6, 9 (2015).

⁸ White, *The Legal Regime*, *supra* note 5, at 96–97.

ticularly problematic is its relation with Article II of the Treaty. Under the Act the United States attributes itself the right to confer property rights over space resources to its private companies. Importantly, under international law, property rights require a superior authority, a State, entitled to attribute and enforce them. This signifies that States need to have property rights first before being allowed to attribute them to other entities. Seeing from this perspective the Act could be interpreted as an attempt by the United States to claim property rights over asteroid resources, a position which would clash with the non-appropriation clause, not lastly because, as described, there is no consensus on whether these resources can be appropriated and exploited.

Thus, there is serious question whether the U.S. government's understandable desire to create an environment conducive to flourishing space commerce—something for which a means of defining and enforcing private property rights is essential⁹—is in fact compatible with existing international law, to which the United States has consented. Recognizing the dilemma, Tronchetti¹⁰ points to two categories of solutions for this problem. One relies on governance mechanisms at the international level and the other at the national level. Ultimately, Tronchetti¹¹ seems to prefer a mixture of both:

If the objective of the United States is to support a private asteroid mining industry this viewpoint would suggest the United States to follow an international and domestic path. Internationally, the United States should take the initiative to try to achieve recognition of the permissibility under existing space law of the appropriation and utilization of celestial bodies [sic] resources for purposes other than scientific. Until such a recognition exists any national initiative addressing this issue would be challenged and criticized. Domestically, the United States should support the nascent private space mining sector. However, rather than rushing the adoption of controversial legislation dealing with extraterrestrial property rights, it should gradually develop a national regulatory framework to manage (non-governmental) activities on celestial bodies, including the identification of competent federal agencies, the establishment of technical and safety standards as well as of licensing procedures.

⁹ See ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS 504 (1776); LUDWIG VON MISES, HUMAN ACTION: A TREATISE ON ECONOMICS (1949); Armen A. Alchian & Harold Demsetz, *The Property Rights Paradigm*, 33 J. ECON. HIST. 16, 22–25 (1973); Douglass C. North, *Institutions*, 5 J. ECON. PERSP. 97, 97–98 (1991).

¹⁰ Tronchetti, *supra* note 7, at 7–8.

¹¹ *Id.* at 9.

Pursuing international and domestic solutions through established legal channels is certainly a worthy endeavor. However, there is a third option not considered by Tronchetti, and considered little by those exploring the architecture for a future space legal system. The two options, international and domestic, are both *public law* options. There remains the possibility of commercial space governance evolving along the lines of *private law*. A private legal order for space commerce would not use existing national or international institutions of public governance (law creation, adjudication, enforcement, etc.). Instead, law would result from specific bargains made among commercial entities, including whatever dispute resolution procedures agreed to by the parties themselves.

This article contributes to the literature on legal issues associated with property rights in space¹² by exploring the implica-

¹² See Stephen Gorove, *Interpreting Article II of the Outer Space Treaty*, 37 FORDHAM L. REV. 349, 349 (1968); Wayne N. White, Jr., *Real Property Rights in Outer Space*, SPACE FUTURE (1998), http://www.spacefuture.com/archive/real_property_rights_in_outer_space.shtml [<https://perma.cc/3CCY-75CC>]; Wayne N. White, Jr., *Interpreting Article II of the Outer Space Treaty*, PROC. FORTY-SECOND COLLOQUIUM ON L. OUTER SPACE 174, 179–80 (2003); Ricky J. Lee, *Reconciling International Space Law with the Commercial Realities of the Twenty-First Century*, 4 SING. J. INT'L & COMP. L. 194, 237 (2000); Lawrence A. Cooper, *Encouraging Space Exploration Through a New Application of Space Property Rights*, 19 SPACE POLICY 111, 117 (2003); Michael J. Listner, *The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims*, 1 REGENT J. INT'L L. 75, 94 (2003); Carol R. Buxton, *Property in Outer Space: The Common Heritage of Mankind Principle vs. the "First in Time, First in Right" Rule of Property*, 69 J. AIR L. & COM. 689, 705–07 (2004); Brandon C. Gruner, Comment, *A New Hope for International Space Law: Incorporating Nineteenth Century First Possession Principles into the 1967 Space Treaty for the Colonization of Outer Space in the Twenty-First Century*, 35 SETON HALL L. REV. 299, 355–57 (2004); Henry R. Hertzfeld & Frans G. von der Dunk, *Bringing Space Law into the Commercial World: Property Rights Without Sovereignty*, 6 CHI. J. INT'L L. 81, 98–99 (2005); Rosanna Sattler, *Transporting a Legal System for Property Rights: From the Earth to the Stars*, 6 CHI. J. INT'L L. 23, 44 (2005); Jeremy L. Zell, Note, *Putting a Mine on the Moon: Creating an International Authority to Regulate Mining Rights in Outer Space*, 15 MINN. J. INT'L L. 489, 518 (2006); Nikhil D. Cooper, Note, *Circumventing Non-Appropriation: Law and Development of United States Space Commerce*, 36 HASTINGS CONST. L. Q. 457, 482 (2009); Alan Wasser & Douglas Jobes, *Space Settlements, Property Rights, and International Law: Could a Lunar Settlement Claim the Lunar Real Estate It Needs to Survive?*, 73 J. AIR L. & COM. 37, 78 (2008); Tony Milligan, *Property Rights and the Duty to Extend Human Life*, 27 SPACE POL'Y 190, 193 (2011); Rand Simberg, *Homesteading the Final Frontier: A Practical Proposal for Securing Property Rights in Space*, COMPETITIVE ENTERPRISE INST. 1 (2012), <http://cei.org/sites/default/files/Rand%20Simberg%20-%20Homesteading%20the%20Final%20Frontier.pdf>; Rand Simberg, *Property Rights in Space*, THE NEW ATLANTIS (2012); Brian C. Weeden & Tiffany Chow, *Taking a Common-Pool Resources Approach to Space Sustainability: A Framework and Potential Pol-*

tions of a private legal order for celestial commerce. Similar to Salter and Leeson,¹³ this article explores the feasibility of a widespread private legal order for commercial space activities, as well as the socially beneficial aspects of this kind of ordering. This argues that a private legal order permits the sophistication and adaptability required to meet the inevitable wide range of particular circumstances facing commercial entities, while also providing the assurance necessary for commercial entities to form expectations of each other's future behavior. Since the article discusses legal order not enforced by the state, it is also a part of the literature on "analytic anarchism,"¹⁴ or how individuals and social groups are able to govern themselves when they do not have an irresistible monopoly enforcer. Systems of private law lack this enforcer and so must devise order by other means.

The remainder of this article is organized as follows: Section II explores the feasibility of a private commercial legal order in space. Section III considers the socially desirable aspects of such a legal order. Section IV concludes by addressing several possible objections.

icies, 28 SPACE POL'Y 166, 172 (2012); Matthew Feinman, *Mining the Final Frontier: Keeping Earth's Asteroid Mining Ventures from Becoming the Next Gold Rush*, 14 PITT. J. TECH. L. & POL'Y 202, 234–35 (2014); Lauren E. Shaw, *Asteroids, the New Western Frontier: Applying Principles of the General Mining Law of 1872 to Incentive Asteroid Mining*, 78 J. AIR L. & COM. 121, 168–69 (2013); Thomas R. Irwin, Note, *Space Rocks: A Proposal to Govern the Development of Outer Space and Its Resources*, 76 OHIO ST. L.J. 217, 245–46 (2015); Andrew Lintner, *Extraterrestrial Extraction: The International Implications of the Space Resource Exploration and Utilization Act of 2015*, 40 FLETCHER F. WORLD AFF. 139, 153–54 (2016); Alexander William Salter, *Space Debris: A Law and Economics Analysis of the Orbital Commons*, 19 STAN. TECH. L. REV. 221, 237–38 (2016).

¹³ See Alexander W. Salter & Peter T. Leeson, *Celestial Anarchy: A Threat to Outer Space Commerce?*, 34 CATO J. 581, 592–93 (2014).

¹⁴ See, e.g., DAVID FRIEDMAN, *THE MACHINERY OF FREEDOM: GUIDE TO A RADICAL CAPITALISM* xii–xv (3d ed. 2014); ROBERT C. ELLICKSON, *ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES* 1–11 (1991); TERRY L. ANDERSON & PETER J. HILL, *THE NOT SO WILD, WILD WEST: PROPERTY RIGHTS ON THE FRONTIER* 4–5 (2004); Bryan Caplan & Edward P. Stringham, *Privatizing the Adjudication of Disputes*, 9 THEORETICAL INQUIRIES L. 504, 599 (2008); Benjamin W. Powell & Edward P. Stringham, *Public Choice and the Economic Analysis of Anarchy: A Survey*, 140 PUB. CHOICE 3–4 (2009); Peter Boettke, *Anarchism and Austrian Economics*, 7 NEW PERSPECTIVES ON POLITICAL ECONOMY 1 (2011); Edward P. Stringham & Todd J. Zywicki, *Hayekian Anarchism*, 78 J. ECON. BEHAV. & ORG. 290, 293 (2011); PETER T. LEESON, *ANARCHY UNBOUND: WHY SELF-GOVERNANCE WORKS BETTER THAN YOU THINK* 1–3, 10 (2014); EDWARD P. STRINGHAM, *PRIVATE GOVERNANCE: CREATING ORDER IN ECONOMIC AND SOCIAL LIFE* (2015).

II. SELF-ENFORCING EXCHANGE: THE FEASIBILITY OF PRIVATE LAW¹⁵

A. THEORY

Many economists and legal theorists believe that widespread social order, including protection of private property, requires a strong state to enforce contracts and uphold the rule of law. While social scientists concede that in some small-scale settings private ordering is viable, a large and robust commercial network requires some element of public ordering. Today, this role is filled by the state, which can reasonably be modeled as an irresistible monopoly enforcer. This explains why many writers on space commerce assume there must be some form of public ordering—either national or international—that creates and enforces property rights to celestial resources. The conventional wisdom is admirably summarized by Pop: “Appropriation of land can exist outside the sphere of sovereignty, but its survival is dependent upon endorsement from a sovereign entity.”¹⁶

The standard model employed by social scientists when considering how individuals act without recourse to a sovereign enforcer is the Prisoners’ Dilemma. Two individuals, Alice and Bob, are considering whether to acknowledge each other’s private property rights. Each has two choices: respect the property claims of the other (cooperate) or prey on the other and take the other’s property (defect). Assume that Alice and Bob make their choices simultaneously. If they both choose to cooperate, they each receive a payoff of $A > 0$, gained from the enjoyment of their property. However, if Alice defects while Bob cooperates, Alice can receive a higher payoff $C > A$, while Bob is left with $B < 0$. If both choose to defect, they engage in mutually costly conflict and are left with a payoff of 0 each. This situation is represented in the game matrix labeled Figure 1 below.

¹⁵ This section is adapted from Salter & Leeson, *supra* note 13, and is a condensation of the argument contained therein.

¹⁶ Pop, *supra* note 5, at 281.

Figure 1—The Prisoners' Dilemma¹⁷

	Cooperate	Defect
Cooperate	A, A	B, C
Defect	C, B	0, 0

Without a sovereign to uphold Alice's and Bob's property claims, they will both choose to defect. While they could both earn a higher payoff if they cooperated, each player maximizes his or her payoff by choosing to defect, regardless of what the other player does. In other words, defecting is a dominant strategy. We appear to be stuck in the Hobbesian jungle.

However, the above is limited in one important respect: it assumes a one-time interaction between Alice and Bob. This is not very realistic. When describing the behavior of potential economic partners, it makes much more sense to assume they will interact multiple times over their lives. If we assume Alice and Bob will face this choice not just once, but indefinitely into the future as well, the situation looks quite different. Suppose that Alice and Bob are each willing to give the other a chance to cooperate, but if either encounters defection, they will refuse to cooperate (defect) for all subsequent interactions. Further assume that each player discounts future payoffs by a factor of β , which is between 0 and 1, since future payoffs are worth less than that same payoff today, all else being equal. The closer β is to 1, the less a player discounts future payoffs, implying a greater degree of 'patience.' Now, the payoff for cooperation is

Figure 2

$$\sum_{t=0}^{\infty} \beta^t A$$

The payoff to each player for defecting is still C. But if they choose to do this, they will receive a payoff of 0 in all future

¹⁷ Salter & Leeson, *supra* note 13, at 585.

periods. Using the rule for solving an infinite geometric series and then solving for β , cooperation becomes the preferred strategy for both Alice and Bob so long as

Figure 3

$$\beta > \frac{C - A}{C}$$

In other words, so long as Alice and Bob are sufficiently patient—they do not discount future payoffs too steeply—then a cooperative solution is possible, even without a sovereign enforcer. Mutual respect of property rights becomes self-enforcing. Social scientists call this the *discipline of continuous dealings*: since the gains from defection are gained only once, but the gains from cooperating extend into the indefinite future, rational individuals will be much more likely to cooperate when they repeatedly interact.¹⁸ When applied to property rights in the context of space commerce, we have good reason to suspect that the relevant parties will be patient. Engaging in space commerce requires large up-front investments before commercial entities will begin to see positive cash flow. Because of these large fixed costs, space commerce as an industry will select for those who are relatively patient, and are thus much more likely to engage in cooperative ventures, including respecting the property claims of other commercial entities.

The discipline of continuous dealings shows that, even without an irresistible monopoly enforcer, property rights can exist and be sustained. This is the foundation of a private commercial legal order, but it is not a private commercial legal order itself. More than theory is needed to demonstrate that purely private law is viable. Fortunately, history supplies us with several such examples, in such varied situations as medieval Iceland¹⁹ and the 19th century American frontier.²⁰ Probably most relevant to the problem of private legal ordering for space commerce is in-

¹⁸ The above example had only two parties, Alice and Bob, but the logic holds if there are more than two parties. In fact, as we add additional players, the possibility of reputational effects strengthens the tendency for cooperation. If Alice wishes to defect in her dealings with Bob, she not only has to worry about losing future payoffs from cooperating with Bob, but she runs the risk of Bob telling Charlie about Alice's antisocial behavior. Thus, Alice loses two future trading partners instead of just one.

¹⁹ See FRIEDMAN, *supra* note 14, at xii–xv.

²⁰ See ANDERSON & HILL, *supra* note 14, at 9.

ternational trade and the institutions that provide the legal framework that governs it.

B. HISTORY

Internationally, there is no sovereign. The world's polities exist in a "state of nature." Thus, there is no formal organization that can define and enforce property rights among individuals from different states who engage in commerce. "In this sense the property rights situation that parties to international commerce confront is similar to the property rights situation that prospective parties to outer space commerce confront."²¹ If conventional wisdom regarding the infeasibility of widespread secure private property rights is accurate, then international anarchy should render commerce between subjects of different states extremely difficult and highly uncertain. Instead, we observe international commercial activity as rich, varied, and lucrative. Parties to international commercial deals have access to a sophisticated private and voluntary legal system that helps them adjudicate disputes and accurately form expectations of future behavior such that the need for dispute resolution in the first place is low. It would be inaccurate to describe international commerce as an Eden of laissez-faire, but it is far more orderly than the conventional wisdom would suggest.

The reasons for this are complex and have deep historical roots. It is well known that, following the collapse of the Roman Empire in the West, the volume of international trade shrank considerably.²² The legal infrastructure provided by the Empire no longer stood, and the transition away from this order caused significant commercial disruption. By the ninth and tenth centuries, trade was recovering.²³ Across Europe, a professional merchant class emerged and developed mechanisms to resolve disputes over property rights and contract enforcement, even when subjects were from different polities and thus no national court had jurisdiction.²⁴

The solution was private, merchant-developed law that was enforced in private, merchant-developed courts. This medieval law merchant (*lex mercatoria*) was a system of self-enforcing property

²¹ Salter & Leeson, *supra* note 13, at 588.

²² See Bruce L. Benson, *The Spontaneous Evolution of Commercial Law*, 3 SOUTHERN ECON. J. 645, 646 (1989).

²³ See *id.*

²⁴ See *id.* at 646–47.

rights according to legal rules that emerged out of dispute resolution among interested parties.²⁵ On this basis, international commerce and commercial law “have developed coterminously, without the aid . . . of the coercive power of nation-states”²⁶ The content of these rules initially owed much to the newly-rediscovered Roman civil law. But the rules evolved as best commercial practices in specific geographic locales became recognized and incorporated into the *lex mercatoris*, such that they informed and became a part of standard merchant practice for those engaged in international trade.²⁷

As for the courts, they developed their own rules of evidence and protocols for consulting experts, whose services were frequently needed when dealing with the highly specialized issues that pertained to international commercial contracts. Benson²⁸ and Milgrom et al.²⁹ note that these courts often operated with significantly less pomp and circumstance than the national courts of the time and reached decisions much more quickly, which was a feature highly valued by international traders. As for enforcing a merchant court’s decision, international traders relied on reputational effects in the context of the discipline of continuous dealings, as described earlier.³⁰ The courts themselves had no formal enforcement power. They could not coercively compel compliance with a decision.³¹ But most traders complied with merchant court decisions, even without the threat of coercive enforcement. Failure to do so would quickly brand one as a defector, and thus unsafe as a trading partner.³² This would make it extraordinarily difficult to find willing trading partners, and hence to continue to make profits, in the future. Thus, the vast majority of decisions regarding contract dispute were self-enforcing.

Today, international trade is still overwhelmingly privately governed. Although modern states have much higher capacity to create and enforce property rights than medieval polities, those engaged in international trade choose to make use of pri-

²⁵ *Id.* at 647.

²⁶ *Id.* at 645.

²⁷ *Id.* at 648.

²⁸ *Id.* at 649–51.

²⁹ See Paul R. Milgrom et al., *The Role of Institutions in the Revival of Trade: The Law Merchant, Private Judges, and the Champagne Fairs*, 2 *ECONOMICS & POLITICS* 1, 5–6 (1990).

³⁰ See *id.* at 7–14.

³¹ See Benson, *supra* note 22, at 650.

³² See Milgrom et al., *supra* note 29, at 9–10.

vate arbitration.³³ At least ninety percent of international commerce contracts contain clauses that state parties will, in the event of dispute, pursue private arbitration.³⁴ In 2001, the largest provider of private arbitration services, the International Chamber of Commerce (ICC), was involved in disputes between over 1,500 parties from 115 countries. These disputes ranged from \$50 to \$1 billion, with over sixty percent for amounts between \$1 million and \$1 billion.³⁵ In the same year, the International Center for Dispute Resolution, another private arbitration organization, was involved in disputes totaling \$10 billion with parties from sixty-three countries.³⁶ As in medieval times, decisions reached by private arbitration are almost always respected by the commercial parties. The ICC estimates that ninety percent of its decisions are complied with voluntarily,³⁷ due to the discipline of continuous dealings and reputational effects.³⁸

Theory and history thus show that creation and enforcement of private property rights, along with a body of law that provides for dispute adjudication, can exist even without sovereign oversight. There is no *prima facie* reason to think that “celestial anarchy,” an environment free from the jurisdiction of national sovereigns due to Article II of the Outer Space Treaty, will be any different than international anarchy on earth. But this merely demonstrates that widespread private ordering for space commerce is *viable*. It remains to be seen whether such a system is *desirable*. The next section considers this latter criterion.

³³ Peter T. Leeson, *How Important is State Enforcement for Trade?*, 10 AM. L. & ECON. REV. 61, 62 (2008).

³⁴ *Id.* at 64.

³⁵ Salter & Leeson, *supra* note 13, at 590 (citing 2001 Statistical Report, 13(1) ICC INT’L CT. ARB. BULL. 5, 6, 8 (2002)).

³⁶ See Salter & Leeson, *supra* note 13, at 593.

³⁷ Leeson, *How Important is State Enforcement*, *supra* note 33, at 68.

³⁸ Since 1958, sovereigns have had a partial role in enforcing international trade contracts. In that year, the first multinational treaty was signed to facilitate the enforcement of private arbitration decisions in national courts. Signatory nations to the United Nations New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards (the New York Convention, or NYC) agree that, if a citizen loses an arbitration judgment to a foreign national, the foreign national can have this decision coercively enforced by the citizen’s government. However, this does not invalidate the self-enforcing nature of international commerce for two reasons. First, international commerce was substantial prior to 1958. Even if the treaty helped, it was by no means necessary. Second, the treaty is still an agreement among sovereigns who are in a state of nature with respect to each other. International anarchy still prevails, since there is no international sovereign who can compel agreement and compliance. See Leeson, *How Important is State Enforcement*, *supra* note 33, at 83.

III. ORGANIZATIONS AND ORDERS: THE DESIRABILITY OF PRIVATE LAW

A. KINDS OF SOCIAL ORDER

Desirability is an inherently normative concept, dealing in statements not just of “is,” but also of “ought.” To keep the analysis as broad as possible, when the author argues that a private legal order for celestial commerce is desirable, he means that it possesses general features conducive to the satisfaction of human wants that are near-unanimously judged to be socially beneficial. These features are the combination of stability and adaptability: a legal system ought to provide firm ground upon which parties can form reliable expectations of future behavior but must also be sensitive to particulars and changeable when circumstances require.

As a body of rules for coordinating social behavior, a legal system must possess mechanisms that align the *incentives* of those who act within it and provide them the *information* necessary to achieve their goals in a way compatible with the similar desire of others. To understand how this is possible, we need to distinguish between two kinds of order, regularity or coordination, in the social world.³⁹ The most salient kind of order is consciously brought into being.⁴⁰ This kind of order is purposively created by a mind or group of minds.⁴¹ An example would be a business firm or an administrative bureaucracy. These types of social bodies, or *organizations*, can be reasonably characterized as having a goal or teleology.⁴² However, purposely created order is not the only kind of order in the social world. There is also emergent or spontaneous order; to paraphrase Adam Ferguson, “the result of human action, but not the execution of any human design.”⁴³ These orders are not intentionally created by any one mind or group of minds.⁴⁴ As social systems, they frequently have tendencies or characteristics, but they are not goal-oriented.⁴⁵ Hayek calls this kind of system an “order,” or (felicitously, given this

³⁹ See 1 F. A. HAYEK, *LAW, LEGISLATION AND LIBERTY: RULES AND ORDER* 35–54 (1973).

⁴⁰ See *id.* at 36.

⁴¹ *Id.*

⁴² See *id.* at 37.

⁴³ Adam Ferguson, *An Essay on the History of Civil Society* 1, 205 (1767), <http://oll.libertyfund.org/titles/ferguson-an-essay-on-the-history-of-civil-society> [https://perma.cc/5PFK-M6WS].

⁴⁴ See HAYEK, *LAW, LEGISLATION AND LIBERTY*, *supra* note 39, at 36–37.

⁴⁵ *Id.* at 38.

article's subject) a *cosmos*.⁴⁶ An order is created by interactions among various organizations.⁴⁷ The properties of the order can be explained with reference to the characteristics of the organizations that interact within it, but these properties are not reducible to the various constituent organizations.⁴⁸ The whole is more than the sum of its parts; or, more accurately, the whole has properties that are exhibited by none of the parts in particular.⁴⁹

The organization-order distinction has been most extensively developed in the theory of markets. Markets are comprised of organizations (households, firms) but the market itself is an order. Hayek⁵⁰ explored the properties of markets as orders, noting that in markets, millions of individuals are somehow able to coordinate their actions and cooperate with each other, in their capacities as consumers or producers, despite not knowing each other personally, and despite knowing only an infinitesimal amount of the total knowledge embedded within markets. Markets are able to achieve a tremendous degree of coordination due to the system of prices that continually adjust in response to changing supply and demand conditions.⁵¹ Market prices express tradeoffs, in the form of real resource scarcities across various alternative lines of production. When acting in markets, households' and firms' subjective valuations of goods and services confront objective tradeoffs.⁵² When supply and demand conditions change, prices change, which provide a crutch for households and firms in coordinating their production and consumption decisions.

As an example, if an unexpected frost kills a portion of an orange crop, fewer oranges will be available for exchange on the market. In the interests of efficiency (directing resources to their highest-valued uses), the marginal orange should be saved for only the most valuable, *feasible* lines of production or consumption, which have been reduced due to the frost. Markets provide the information and incentives necessary for precisely this to happen: the reduced supply of oranges will cause the price of oranges to rise; households that consume oranges, and

⁴⁶ *Id.*

⁴⁷ *Id.* at 37.

⁴⁸ *Id.* at 36.

⁴⁹ *Id.* at 42.

⁵⁰ See F. A. HAYEK, *INDIVIDUALISM AND ECONOMIC ORDER* 33–56 (1948).

⁵¹ See *id.* at 41–42.

⁵² See *id.* at 44–45.

firms that purchase oranges to make orange juice, etc. will scale back their purchase of oranges. This leaves more of the smaller total quantity of oranges for purchase by those who are willing to pay the higher price. But, those who are willing to pay the higher price are those who value the oranges more highly in consumption, or are those who believe they can use the oranges as inputs into producing other goods, such as Grand Marnier, which are more valuable to consumers, and thus justify paying the higher price. No household or firm needs to know specifics about the frost nor exactly how the price effects of the frost will spill over into various markets. Markets help generate this knowledge due to the mutual adjustments between suppliers and demanders and provide each an incentive to steward the scarce resource in the form of a cost (the price) that must be incurred in order to acquire the resource.⁵³

Thus, the *tendency* towards efficiency, and thus the mutual coordination of consumers' and producers' plans, is a property not of any household or firm, or group of households or firms, but the market itself.⁵⁴ This also suggests why command and control solutions to economic problems, such as complete socialism, fail. Command and control for an entire market economy destroys the social intelligence of the marketplace by replacing it with the much, much more limited intelligence of the organization in charge of allocating resources. The knowledge necessary to put resources to their highest-valued uses does not exist in a manner that can be harnessed by any person or group. The market, in order to deliver the benefits we have come to expect from commercial exchange, must be an order.

The above summary of the core insight of market theory illustrates the importance of orders in promoting social coordination. Many things are far too complex to be trusted to consciously crafted organizations. Within the field of law and economics, many scholars have noted that legal systems, as sources of social rule creation and enforcement, also fit the organization-order typology. An example of organization-created rules would be bureaucratic fiat, whereas an example of order-created rules would be judicial decisions in a common law system. Posner⁵⁵ famously argued that the common law system had

⁵³ See *id.* at 50–55.

⁵⁴ *Id.*

⁵⁵ See RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 249–75 (Vicki Been et al. eds., 7th ed. 2007).

strong tendencies to produce efficient legal rules and linked this tendency to features of the system such as judge-made law, adversarial proceedings, and precedent. For our purposes, what matters is the emphasis Posner and other scholars placed on the adjustment mechanisms in legal systems that helped coordinate the behavior of those who acted within these systems.

B. ORDER AND PRIVATE LAW

In a competitive, discovery-oriented legal system, rules are analogous to market prices.⁵⁶ Market prices give parties information regarding the terms of exchange; legal rules give to parties the terms of interaction, providing a “language” of interpersonal conduct.⁵⁷ Like market prices, legal rules that coordinate the actions of those governed by these rules must be discovered, rather than set in advance.⁵⁸ A private legal ordering of the kind discussed in Section II is one in which rules that do a good job of providing both stability and flexibility are likely to be discovered and maintained, while rules that do a poor job are likely to be discarded. The medieval and modern law merchant are legal orders that are private. Its rules emerge from the decentralized interaction of traders and arbitrators, rather than from any centralized apparatus of command.⁵⁹ Admittedly, it is not the only kind of legal order possible. The common law is also an order, as the writings of Hayek and Posner show.⁶⁰ Furthermore, the role of public courts in common law systems show that a legal order need not be wholly private. But, such a legal order *can* be purely private, as the law merchant demonstrates.

What are the systemic properties of private commercial law that produce social coordination, by aligning the incentives and information of those engaged in commerce? There are several institutional features that, in tandem, achieve this.⁶¹ First, the

⁵⁶ See Todd J. Zywicki & Anthony B. Sanders, *Posner, Hayek, and the Economic Analysis of Law*, 93 IOWA L. REV. 559, 590 (2008).

⁵⁷ See *id.* at 591.

⁵⁸ See *id.* at 594–96.

⁵⁹ *Id.* at 597.

⁶⁰ See *id.* at 602–03.

⁶¹ See Benson, *supra* note 22, 660–61; Bryan Caplan & Edward P. Stringham, *Privatizing the Adjudication of Disputes*, 9 THEORETICAL INQUIRIES L. 503, 528 (2008); FRIEDMAN, *supra* note 14, at xii–xv; David Friedman, *Private Creation and Enforcement of Law: A Historical Case*, 8 J. LEGAL STUD. 399, 410–11 (1979); Carrie B. Kerekes & Claudia R. Williamson, *Discovering Law: Hayekian Competition in Medieval Iceland*, 21 GRIFFITH L. REV. 432, 445 (2012); Edward Stringham, *Market Chosen Law*, 14 J. LIBERTARIAN STUD. 53, 76–77 (1999); Edward P. Stringham,

foundational principles of private commercial law, which will likely be applicable to nascent space commerce as well, are well established through centuries-long usage. Importantly, this does not preclude innovations at the margin, as particular circumstances arise that extend the application of the basic legal principles to new particulars, without erasing the principles themselves:

[T]he primary principles underlying customary business law are [unlikely] to change. The basic rules of private property and freedom of contract developed centuries ago . . . the need for extensions of these basic principles to cover unanticipated circumstances always arises, however, and customary law adapts, building on the existing base of substantive principles.⁶²

These foundational principles are the basic material commercial traders use to form expectations about what rules will be respected in engaging with fellow trading partners, what actions cause parties to seek adjudication, and how those adjudications are likely to be resolved. Importantly, the customary body of merchant law is not codified law, in the sense of a centrally compiled set of rules that detail how particular disputes have been or will be resolved.⁶³ Rather, the law took the form of

written commercial instruments and contracts. *In this regard, note that 'contract law' refers to the 'law' that parties in exchange bring into existence by their contractual agreement rather than to the law of or about contracts. . . .* As contractual form came into common usage it actually became a part of the Law Merchant.⁶⁴

While the foundational principles are unchanging, their particular applications frequently do change to meet the needs of commerce. The principles provide stability, but contractual innovations that arise as the needs of trade dictate, and are enforced in private commercial courts, provide flexibility.⁶⁵ Furthermore, these contractual innovations, provided they persistently help traders meet their goals, become generally used in the course of commerce, and thus become law.⁶⁶ As Benson notes:

Extending the Analysis of Spontaneous Market Order to Governance, 42 ATLANTIC ECON. J. 171, 178 (2014); STRINGHAM, *supra* note 14, at 4–5.

⁶² Benson, *supra* note 22, at 659 (footnotes omitted).

⁶³ *See id.* at 649.

⁶⁴ *Id.* at 649 (emphasis added) (footnotes omitted).

⁶⁵ *See id.* at 649–51.

⁶⁶ *See id.* at 651–54.

[i]f a contract is a standard one based on long standing tradition, it simply reflects existing customary commercial law; if a contract develops an effective new business practice in the face of a new situation, it is likely to add to customary law. Since commerce operates in a dynamic continually changing environment, new contractual arrangements are always being mediated—*new law is being created*.⁶⁷

This combination of stability and flexibility is what provides traders and arbitrators the information they need to coordinate their behavior. The foundational customary principles, which are widely publicly known, give adjudicators information on how to deal with basic disputes; traders know this, and take actions to avoid basic disputes, since disputes are costly to all parties.⁶⁸ Particular extensions can be less well known, since in modern commercial arbitration the proceedings and awards of damages are almost always kept private. However, traders and arbitrators interact within a social network that fosters the transmission of information. For example, arbitrators may discuss cases by anonymizing key details. And while there are no case books for international commercial arbitration, papers and books prepared by arbitrators for conferences and other professional gatherings provide a way for both traders and arbitrators to get some insight for how similar conflicts in the future may be resolved. Furthermore, while the details of the outcome of an arbitration may be unobserved, the fact that a contract ends up being arbitrated in the first place is observable. That a particular contractual form resulted in a dispute is itself useful information for traders and arbitrators to take into account.

Second, traders and arbitrators have strong incentives to act in a manner that resolves disputes in as low-cost a manner as possible. As mentioned above, traders very frequently write arbitration clauses into their contracts.⁶⁹ If a conflict over contractual interpretation arises, traders want to resolve this conflict as quickly and cheaply as possible; the more time and money tied up in adjudication, the less time available for actually engaging in profitable commerce.⁷⁰ Adjudicators are also cost-conscious: they must be voluntarily selected by all parties, since compulsory jurisdiction does not exist. The selection of an adjudicator would depend on traders' perception of an adjudicator's exper-

⁶⁷ *Id.* at 658 (emphasis added).

⁶⁸ *Id.* at 650.

⁶⁹ See Leeson, *supra* note 33, at 64.

⁷⁰ See Benson, *supra* note 22, 656–57.

tise, as well as their reputation for impartiality (while selfish traders may prefer an adjudicator biased in their favor, this is highly unlikely to be agreed to by the other parties, since selection of an adjudicator must be voluntary and unanimous).⁷¹ Adjudicators who were perceived to be biased or inexperienced would find their reputations suffer, losing business as a result.⁷² And as already mentioned, traders are very likely to agree voluntarily to an adjudication decision, even if they believe it was decided in error in their particular case. Traders who reneged would acquire a reputation of being untrustworthy and would find it difficult to secure trading partners in the future.⁷³ Except perhaps in disputes involving extraordinarily large sums of money, with one of the traders not anticipating being “in the game” for much longer, defection from previously agreed upon arbitration procedures is unlikely.

C. SOCIAL BENEFITS

The information-generating and incentive-aligning features of a private legal commercial order are obviously beneficial for traders and arbitrators, but they are also beneficial for the rest of society as well. This is because economizing on costs—using as few resources to achieve a goal as possible—leaves more resources left over that can be put to other uses. When a firm cuts costs, it makes higher profits, which benefits the firm. But in lowering costs, it has also used up less resources, which can now be used to satisfy other wants. This is good even for those who do not work for the firm or do business with the firm. For example, even those who do not ride trains prefer to live in a world where railroad businesses use steel rails, rather than platinum or titanium. These latter metals have much higher valued uses, such as in communications satellites. In a world where railroads are built using platinum or titanium, all society gets is expensive rail travel. But in a world where railroads are built using steel, and platinum and titanium are saved for making communications satellites, society gets cheap rails as well as telecommunication services. Society is wealthier by the amount of resources saved by economizing on costs.

The information generated by a private commercial order helps traders avoid conflict. Conflict is costly for traders; adjudication

⁷¹ See *id.* at 649.

⁷² See *id.*

⁷³ See Milgrom et al., *supra* note 28, at 9–10.

cating conflict uses up real resources.⁷⁴ Avoiding conflict in the first place makes both traders and society as a whole wealthier. But some amount of conflict due to honest disagreement over contractual terms is unavoidable. In this situation, the incentives of traders and arbitrators is to settle the dispute as quickly as possible, subject to some decision procedure which is voluntarily agreed upon, and thus decided by all parties to be beneficial *ex ante*.⁷⁵ Specific practices of merchant courts, such as simple rules of evidence and forbidding appeals, result in minimal resources devoted to conflict resolution, which again reflects the interests of both traders and arbitrators, as well as society at large in the form of economized costs.⁷⁶

The incentives of traders and arbitrators are aligned through reputational effects and the discipline of continuous dealings. Traders bear the costs of arbitration and will only engage in arbitration when they find such procedures to be mutually beneficial. Arbitrators will preside over cases in exchange for compensation, the future prospects of which incentivize them to reach speedy and unbiased decisions. Because the costs of dispute resolution are borne primarily by the parties to these disputes, a private commercial legal order gives parties the incentive to act in socially beneficial ways—or, to put it differently, the incentives within the system align what is personally beneficial with what is socially beneficial.

Finally, it is worth contrasting this private legal commercial order with the likely characteristics of a legal order that would arise out of national or international governing bodies attempting to impose a set of rules.⁷⁷ This would transform the legal system from an order into an organization. Whereas a competitive private legal order is capable of generating and conveying to actors a greater amount of knowledge than any one of them can acquire on their own, an organization cannot benefit from this social intelligence mechanism.⁷⁸ Rather than taking advantage of the competitive discovery procedures embedded in a private

⁷⁴ See HAYEK, LEGISLATION AND LIBERTY, *supra* note 39, at 41–45, 50–55.

⁷⁵ See Benson, *supra* note 22, at 649.

⁷⁶ *Id.* at 650.

⁷⁷ Neither a national nor an international governing body, in the abstract, must be a bureaucratic or regulatory organization. But given the constraints posed by the Outer Space Treaty, the most likely course of *public* action in the pursuit of celestial governance would be this kind of organization or organizations. Of course, there is nothing precluding sovereigns from amending international law to avoid this situation. See *infra* Part IV.

⁷⁸ LUDWIG VON MISES, BUREAUCRACY 48–56 (1944).

legal commercial order, the overseeing organization would, by necessity, be taking a top-down approach.⁷⁹ Bureaucrats and regulators in this scenario would not be able to do as well in implementing socially beneficial rules because there is no feedback mechanism informing them which rules best serve the interests of commercial parties.⁸⁰ Furthermore, bureaucrats and regulators would face much weaker incentives to find effective rules.⁸¹ Since they are making decisions the costs and benefits of which primarily are borne by others, bureaucrats and regulators would not personally confront costs and benefits in the same way as under a private legal commercial order.⁸² In fact, the economic literature on bureaucracy strongly suggests that bureaucrats engage in cost-maximizing behavior, rather than cost-minimizing behavior,⁸³ because of a lack of competitive pressure and personal cost bearing. Because of these incentive and information problems, a private legal order for space commerce is more consistent with desirable social consequences, such as cost-minimization, than typical public organizational solutions.

IV. CONCLUSION

The SPACE Act attempts to create an environment conducive to space commerce by promoting U.S. citizens' property rights to celestial resources. This is controversial because it seems to run afoul of Article II of the Outer Space Treaty.⁸⁴ The problems posed by Article II can be overcome by a private law regime for space commerce. A private law regime for space commerce is feasible: property claims to celestial resources, along with rules for adjudicating conflicts over these claims, can be self-enforcing. Thus, property rights and rules do not require protection or enforcement by sovereign states. A private law regime for space commerce is also desirable: as a spontaneous order, it is stable enough to ground commercial actors' expectations and flexible enough to meet the particulars of new contractual arrangements. The legal regime renders the pursuit of self-interest by commercial parties both information- and incentive-compatible with social wellbeing.

⁷⁹ See *id.* at 48–53.

⁸⁰ *Id.* at 40–56.

⁸¹ See *id.* at 51–52.

⁸² See *id.* at 53–55.

⁸³ See GORDON TULLOCK, BUREAUCRACY (1965), reprinted in 6 THE SELECTED WORKS OF GORDON TULLOCK 210–23 (Charles K. Rowley ed., 2005).

⁸⁴ See Tronchetti, *supra* note 7, at 8.

There are several anticipated objections to this article. First, as Tronchetti argues, both national and international law can be modified to create a foundation for space commerce.⁸⁵ This is true; national and international efforts certainly should be made to clarify certain points of international space law. However, since significant amendment to the legal regime will have to take place internationally in order to make clear the relationship between territorial sovereignty and sovereign property rights enforcement—or, in the extreme case, repealing Article II—it must result from consensual agreement among sovereign states. Securing this consent will likely be incredibly costly. Given the feasibility and desirability of private commercial law in space, a strong argument will have to be made for the superiority of some form of public law in this case for the benefits of international treaty amendment to be worth the costs.

Second, critics may charge that this approach is a de facto concession of all authority by national space regulatory bodies. This is not true. Instead, embracing a private commercial legal order for space requires *reorientation* of these agencies. Existing agencies can perform other roles that do not violate Article II. For example, federal agencies can oversee launches by private companies in the United States, to ensure safety standards are met and that commercial space entities do not inadvertently damage citizens' lives or livelihoods. Agencies can also mitigate the problem of space debris in desirable orbits, especially the low earth orbits, by enforcing rules for deorbiting useless material. In fact, many agencies are currently performing these or similar roles, and there is nothing in my argument that compels them to stop.⁸⁶ The feasibility and desirability of private legal commercial order in space still leaves ample room for national agencies to keep space both safe and accessible for citizens, without amounting to a de facto extension of territorial sovereignty, as Tronchetti⁸⁷ shows.

Third, critics might embrace a narrower definition of desirability than currently discussed, one that a private legal commercial order for space may not meet. While this objection is obviously too broad to respond to *sui generis*, the one that merits attention concerns wealth distribution. It may be conceded that

⁸⁵ *Id.* at 7–8.

⁸⁶ See, e.g., Brian Dunbar, NASA Invests in Private Sector Space Flight with SpaceX, Rocketplane-Kistler (2006), https://www.nasa.gov/exploration/news/COTS_selection.html [<https://perma.cc/VJ53-T9BA>].

⁸⁷ See Tronchetti, *supra* note 7, at 9.

a private legal commercial order for space is desirable in that it would create massive amounts of new wealth. But the distribution of this wealth might be sufficiently objectionable that it outweighs the creation of the wealth itself. This claim is incredible, but a satisfactory reply is to allow the private commercial order in space, thereby allowing massive new wealth creation, and then using domestic policy to affect a more desired distribution. If a U.S. company creates wealth in space, the U.S. government might not be able to enforce that company's rights without violating Article II, but there is no reason why it cannot tax the company's earnings.⁸⁸ These tax dollars can then be allocated publicly in line with distributional goals. Ultimately, wealth must be created before it can be distributed. Compared to the extreme scenario of not allowing new wealth creation in the first place, allowing the wealth creation and then redistributing some of it makes many people better off, and nobody worse off.

We cannot know in advance how the existing body of private commercial law will apply to space commerce. While we know that some self-enforcing property and legal regime will emerge out of contracting among commercial space entities, we cannot say what the mixture of existing and new rules and institutions will ultimately govern celestial commerce.⁸⁹ This means scholarship on space governance will be most useful if it answers which space governance problems can be performed by national agencies without violating international treaty, as well as which problems, although they fall within the scope of a public agency's mandate, are best left to private initiative. The tools of law and economics will be invaluable in understanding these governance problems in theory and suggesting solutions to them in practice. Importantly, we must avoid the "pretense of knowledge"⁹⁰ by not trying to write down a set of rules for space governance that do not reflect, and cannot adapt to, the particular circumstances that commercial space entities will face.

⁸⁸ The tax itself will prevent some potential wealth from being created. The dissatisfaction due to the destroyed wealth must be compared to the satisfaction due to achieving a more pleasing distribution of wealth to ascertain whether redistribution is worthwhile.

⁸⁹ See Salter & Leeson, *supra* note 12, at 593.

⁹⁰ Friedrich von Hayek, *The Pretense of Knowledge*, Nobel Memorial Lecture (Dec. 11, 1974), http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/1974/hayek-lecture.html [<https://perma.cc/P4ZQ-3YLU>].

**DE FACTO AMENDMENT OF A FAA REGULATION BY
NON-REGULATORY INTERPRETATION: UNINTENDED
CONSEQUENCES OF FAA SUGGESTIONS ON HOW
TO COMPLY WITH THE FLIGHT REVIEW
REQUIREMENT**

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THE FEDERAL AVIATION ADMINISTRATION (FAA) regulates civil aviation in the United States primarily by issuing regulations.¹ Before becoming effective, FAA regulations (FARs) must be published in the Federal Register, a period must be allowed for public comment, and those comments must be reviewed and considered by the FAA.² The process can be lengthy but serves the important purpose of allowing interested parties to comment.³ It also affords the FAA an opportunity to consider the ramifications of proposed regulations that the agency may have overlooked in the drafting process.⁴

In contrast, the FAA can issue Advisory Circulars that need not be published in the Federal Register and are provided with

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¹ 49 U.S.C. § 106(f)(3) (2012).

² U.S. Dep't of Transp., FAA, Advisory Circular 11-2A ¶ 1-4 (July 26, 1984). The FAA describes its regulatory process as follows:

When an amendment to a FAR is proposed in a Notice of Proposed Rulemaking (NPRM) it is published in the Federal Register. This NPRM not only announces the proposal but it also invites the public to participate in the rulemaking process by submitting written data, views, or arguments prior to a specific date. Each response contributes to the evaluation of the proposal and is considered in the development of the amendment to the FAR which is also published in the Federal Register. . . . In order to develop FAR's that are responsive to the needs and desires of the public and that conform with the regulatory responsibilities of FAA, it is essential that the public participate in the rulemaking process to the fullest practicable extent.

³ See 14 C.F.R. §§ 11.25, 11.39.

⁴ U.S. Dep't of Transp., FAA, Advisory Circular 11-2A ¶ 1-4 (July 26, 1984).

limited or no advance public circulation.⁵ Advisory Circulars are nonbinding discussions of important aviation topics that inform pilots and others of safety or technical matters or assist in interpretation of regulations.⁶ They generally serve that purpose well.

This article discusses what can happen when, with apparently good intentions, the FAA issues an Advisory Circular that purports to explain how to comply with an important regulation in ways that go far beyond the language and intent of the regulation. The result is a *de facto* amendment without the accompanying safeguards of public comment or consideration of unforeseen but significant consequences for the effected aviation community participants.

The regulation in question is Section 61.56 of the FARs, which governs pilot flight reviews.⁷ The relevant Advisory Circular, designated AC 61-98C, was issued in late 2015 as the fourth amendment to a long-standing Advisory Circular.⁸ If applied as written, AC 61-98C would change the flight review regulation in important respects, facilitate claims for liability of flight instructors and others, and discourage use of the flight review process.

I. THE FLIGHT REVIEW REGULATION

Section 61.56 is a FAR with which all pilots are familiar. It affects most pilots by requiring that they undergo a flight review every two years conducted by a certified flight instructor (CFI) in order to continue to exercise pilot privileges.⁹ The Section states, in relevant part:

- (a) Except as provided in paragraphs (b) and (f) of this section, a flight review consists of a minimum of 1 hour of flight training and 1 hour of ground training. The review must include:
 - (1) A review of the current general operating and flight rules of part 91 of this chapter; and
 - (2) A review of those maneuvers and procedures that, at the discretion of the person giving the review, are necessary

⁵ U.S. Dep't of Transp., FAA, Order 1320.46D FAA Advisory Circular System ¶¶ 4-1, 4-2 (2015), https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1320.46D.pdf [<https://perma.cc/NM2J-Q3RF>].

⁶ *See id.*

⁷ *See* Flight Review, 14 C.F.R. § 61.56 (2016).

⁸ U.S. Dep't of Transp., FAA, Advisory Circular 61-98C (Nov. 20, 2015).

⁹ *See* 14 C.F.R. § 61.56(c).

for the pilot to demonstrate the safe exercise of the privileges of the pilot certificate.¹⁰

Unless one of several exceptions apply, a pilot who does not meet the flight review requirement loses the right to exercise his or her pilot privileges:

- (c) Except as provided in paragraphs (d), (e), and (g) of this section, no person may act as pilot in command of an aircraft unless, since the beginning of the 24th calendar month before the month in which that pilot acts as pilot in command, that person has—
 - (1) Accomplished a flight review given in an aircraft for which that pilot is rated by an authorized instructor and
 - (2) A logbook endorsed from an authorized instructor who gave the review certifying that the person has satisfactorily completed the review.¹¹

Section 61.56 permits a single flight review in any aircraft for which a pilot is licensed to satisfy the flight review requirement for all aircraft for which the pilot is licensed.¹² When the regulation was first discussed in 1973, the FAA had proposed to require a separate flight review for each category and class of aircraft for which a pilot was licensed.¹³ Although that suggestion generated considerable public opposition and was dropped by the FAA,¹⁴ it has reemerged in revised AC 61-98C.¹⁵

¹⁰ 14 C.F.R. § 61.56(a).

¹¹ 14 C.F.R. § 61.56(c), (d), (g); 14 C.F.R. § 121.441 (2016). The principal exceptions are stated in § 61.56(d):

A person who has, within the period specified in paragraph (c) of this section, passed a pilot proficiency check conducted by an examiner, an approved pilot check airman, or a U.S. Armed Force, for a pilot certificate, rating, or operating privilege need not accomplish the flight review required by this section

Student pilots are expressly exempted from the flight review requirements by § 61.56(g), if holding a current solo endorsement from a CFI. Airline pilots generally are exempted by meeting the pilot proficiency check conducted by their employer.

¹² *Id.*

¹³ See U.S. Dep't of Transp., FAA, Advisory Circular 61-98A ¶ 6-1 (Mar. 26, 1991). Examples of a category are "airplane," "rotorcraft," and "glider." See General Definitions, 14 C.F.R. § 1.1 (2016). Some of these categories are broken down into classes of aircraft, examples being "single-engine land," "single-engine sea," "helicopter," "gyroplane," etc. See *id.*

¹⁴ See U.S. Dep't of Transp., FAA, Advisory Circular 61-98A ¶ 6-2 (Mar. 26, 1991). ("During public hearings conducted in the initial phases of the regulatory review, comments submitted were generally unfavorable with respect to the category and class requirement proposed for the flight review.")

Section 61.56 grants broad discretion to the CFI to determine both the flight maneuvers to be executed by the pilot and the nature of “the current general operating and flight rules of [14 C.F.R.] [P]art 91” to be reviewed as part of the non-flying component of the flight review.¹⁶ No specific procedures are set forth defining how the instructor should determine if the pilot has demonstrated the necessary knowledge of Part 91 or the ability to safely exercise the pilot’s privileges.

II. THE ADVISORY CIRCULAR

AC 61-98C focuses on flight reviews and, separately, on instrument proficiency checks for pilots holding instrument ratings.¹⁷ It provides sound safety advice when, for example, it urges pilots to “design a currency program tailored to their individual operating environments and needs.”¹⁸ It correctly states that “[i]n most cases, pilots should consider the need for currency beyond that specified by the 14 CFR.”¹⁹ It suggests that pilots consider participating in the FAA WINGS Program and “read aviation periodicals on a regular basis.”²⁰ The analysis in this article is not intended as criticism of safety advice. It focuses, instead, on potential liability consequences for flight instructors and flight schools based on statements made in the Advisory Circular and on other consequences of the Advisory Circular.

The Advisory Circular provides “suggestions” and analyses that are contrary to the requirements of Section 61.56, or that go well beyond the requirements of that regulation. The Advisory Circular appears to be a non-regulatory effort to revisit the FAA’s 1973 effort to require a separate flight review for each category and class rating held by a pilot. The FAA’s statements in the Advisory Circular may, as discussed below, form the basis for asserting liability against instructors who comply with the regulation but not with all aspects of the suggestions in the Advi-

¹⁵ See U.S. Dep’t of Transp., FAA, Advisory Circular 61-98C ¶ 3-1 (Nov. 20, 2015).

¹⁶ Flight Review, 14 C.F.R. § 61.56(a) (2016).

¹⁷ U.S. Dep’t of Transp., FAA, Advisory Circular 61-98C (Nov. 20, 2015). This article focuses on the flight review components of AC 61-98C. Normally instrument proficiency check flights are conducted separately from flight reviews, as many pilots do not have instrument ratings or, if they do, elect to maintain instrument currency by actual instrument flight activity or by practice instrument flight. See Recent Flight Experience: Pilot in Command, 14 C.F.R. § 61.57(c) (2016).

¹⁸ U.S. Dep’t of Transp., FAA, Advisory Circular 61-98C ¶ 1-7 (Nov. 20, 2015).

¹⁹ *Id.*

²⁰ *Id.*

sory Circular. It thereby discourages use of flight reviews generally.

For example, the Advisory Circular notes that pilots who add a rating can treat the check ride for the new rating as satisfying the flight review requirement, but recommends against it:

However, the FAA recommends that pilots consider also accomplishing a review under some of the following circumstances. For example, a pilot with an Airplane Single-Engine Land (ASEL) rating may have recently obtained a glider rating, but may still wish to consider obtaining a flight review in a single-engine airplane if the appropriate 24-month period has nearly expired. When approached by pilots seeking advice on such matters, CFIs should consider the factors described in the following paragraphs.²¹

The paragraphs that follow make a series of recommendations directed at CFIs before undertaking to provide a flight review.²²

Among these recommendations is the statement that when a pilot holds multiple ratings, “the pilot may take a flight review in any one of the aircraft for which he or she holds a rating or operating privilege and they will have met the regulatory requirement for all aircraft for which they [sic] hold a certificate and or rating.”²³ But the Advisory Circular recommends that CFIs resist such action by pilots rated in more than one type of aircraft:

The CFI may also wish to recommend that the pilot take a review in more than one category/class of aircraft under certain circumstances. For example, a pilot with ASEL and glider ratings may have flown only gliders in the last 2 years but is also contemplating flying single-engine airplanes in the near future. If a pilot who requests a review only in the glider approaches a CFI, the CFI may wish to recommend an additional review by a qualified person in a single-engine airplane before the pilot acts as PIC of a single-engine airplane.²⁴

Section 61.56(a)(2) states that the maneuvers to be executed in a flight review are those determined by the CFI.²⁵ They are determined to be those that “at the discretion of the person giving the review, are necessary for the pilot to demonstrate the

²¹ *Id.* ¶ 4-1.

²² *Id.* ¶ 4-2.

²³ *Id.*

²⁴ *Id.*

²⁵ Flight Review, 14 C.F.R. § 61.56(a)(2) (2016).

safe exercise of the privileges of the pilot certificate.”²⁶ Unlike the Advisory Circular, the regulation does not suggest that the CFI should require the pilot to demonstrate proficiency in each category and class of aircraft for which the pilot is rated.²⁷

The Advisory Circular also addresses another issue beyond the scope of Section 61.56—the possibility that the nature of the pilot’s future flight operations may change:

The CFI should consider the need for an in-depth review of certain subjects or procedures if the type of flight operations is likely to change, or if other extenuating circumstances exist. For example, a pilot who normally conducts only local flight operations may plan to begin flying to a location with Class B airspace. Another pilot may only operate a two-seat aircraft without radio but will operate in close proximity to Class B airspace. In both cases, the CFI should include Class B airspace operating requirements and procedures in the flight review. This review should also include pertinent revisions to operational regulations to ensure that the pilot has full knowledge of these changes.²⁸

Section 61.56, in contrast, does not suggest that the CFI should conduct a forward-looking review of possible changes in the pilot’s typical operations.²⁹ A forward-looking review may be a good idea to promote aviation safety and enhance pilot skills, but it is not part of the regulation.

The Advisory Circular is similarly expansive when it comes to the so-called ground portion of the flight review, when the CFI reviews the pilot’s knowledge of the operating rules of 14 C.F.R. Part 91:

The CFI should tailor the review of general operating and flight rules to the needs of the pilot under review. The objective is to ensure that the pilot can comply with all regulatory requirements and operate safely in various types of airspace under an appropriate range of weather conditions. As a result, the CFI should conduct a review that is broad enough to meet this objective, yet provide a more comprehensive review in those areas in which the pilot’s knowledge is weaker. In the latter instance, the CFI may wish to employ a variety of references/sources, such as the Aero-

²⁶ *Id.*

²⁷ See 14 C.F.R. § 61.56(c).

²⁸ U.S. Dep’t of Transp., FAA, Advisory Circular 61-98C ¶ 4-2 (Nov. 20, 2015). “Class B Airspace” refers to controlled airspace around major metropolitan airports, such as Chicago’s O’Hare Field or Los Angeles International. U.S. Dep’t of Transp., FAA, Pilot’s Handbook of Aeronautical Knowledge FAA-H-8083-25B ¶ 15-2 (2016).

²⁹ See 14 C.F.R. § 61.56(a)(2).

nautical Information Manual (AIM), to ensure that the pilot's knowledge meets current standards.³⁰

The Advisory Circular's objective, "to ensure that the pilot can comply with all regulatory requirements and operate safely in various types of airspace[,]"³¹ is considerably more expansive than the Section 61.56(a)(1) requirement of a "review of the current general operating and flight rules of [P]art 91 of this chapter."³² The regulation does not use the term "ensure" or suggest that the CFI has a duty to ensure anything, only to conduct "a review of the current general operating and flight rules of [P]art 91"³³ The difference is plainly significant.

The Advisory Circular's advice to the CFI on how to prepare for the flight review also warrants note:

After reaching an agreement on how the CFI will conduct the review, he or she should prepare an action plan for completing the review. The action plan should include a list of regulatory subjects that the CFI will cover, the maneuvers and procedures that the pilot will need to accomplish, the anticipated sequence in which the segments will occur, and the location where the CFI will perform the review. . . . Although not required by § 61.189, the CFI may wish to retain this action plan for an appropriate time period as a record of the scope and content of the review.³⁴

In summary, the Advisory Circular goes well beyond the regulation in the major respects noted above: (a) it recommends a separate flight review for each category and class of aircraft for which the pilot is licensed;³⁵ (b) it recommends a forward-looking analysis of possible changes in the pilot's typical operations and expands the flight review to include such potential activities;³⁶ (c) it asks the CFI to "ensure that the pilot can comply with all regulatory requirements and operate safely in various types of airspace under an appropriate range of weather conditions";³⁷ and (d) it suggests generating and keeping records that include a "list of regulatory subjects" covered and maneuvers and procedures to be accomplished.³⁸ The FAA has conflated

³⁰ U.S. Dep't of Transp., FAA, Advisory Circular 61-98C ¶ 4-3 (Nov. 20, 2015).

³¹ *Id.*

³² Flight Review, 14 C.F.R. § 61.56(a)(1) (2016).

³³ *Id.*

³⁴ U.S. Dep't of Transp., FAA, Advisory Circular 61-98C ¶ 4-3 (Nov. 20, 2015).

³⁵ *Id.* ¶ 4-2.

³⁶ *Id.*

³⁷ *Id.* ¶ 4-3.

³⁸ *Id.*

two related but distinct subjects: the way to improve aviation safety, and the level of competence and knowledge a pilot must demonstrate to renew his flying privileges every two years. These topics are related but not the same. Conflating the two and adding requirements not found in the regulation can have potentially serious liability ramifications.

III. UNINTENDED CONSEQUENCES

Aircraft accident litigation often involves claims against everyone who had any connection with the accident pilot, including flight instructors.³⁹ While CFIs are not often sued for negligence, it does occur.⁴⁰ The Advisory Circular states expansive performance standards for CFIs, which are summarized above.⁴¹ It is reasonable to anticipate that those standards will be applied to measure the conduct of CFIs who provide flight reviews for pilots subsequently involved in aircraft accidents. If, following an aircraft accident, a CFI were found to be negligent because he or she did not follow one of the expanded standards (or lacked records to show what was covered in the flight review), liability could also be imputed to the CFI's employer, who may be a flight school or other recurrent training provider.⁴²

A CFI planning to conduct a flight review for a pilot with more than one aircraft rating, or even a pilot with a single rating whose flying might change in nature, would have to think twice about whether to provide the review at all. In the case of a pilot with more than one rating, the CFI must consider whether to insist as a condition of the review that the pilot agree to obtain a second flight review for the other category or class of aircraft for which the pilot is licensed. The CFI will need to consider asking the pilot whether it is possible that he may change his flying practices from, for example, local daytime VFR (visual flight rules) flights to long-distance night flights in instrument conditions, or some variant thereof. If the pilot indicates that he might change his flying practices, according to the Advisory Cir-

³⁹ See, e.g., *Garland v. Sybaris Club Int'l, Inc.*, 21 N.E.3d 24, 27–30 (Ill. App. Ct. 2014) (describing the many types of claims that can be asserted against parties having any relationship to a significant aircraft accident, including claims against flight instructors and recurrency training providers who had trained or reviewed the accident pilot, the firm whose business used the accident aircraft on the day of the accident, and the owner who entrusted the aircraft to the accident pilot.).

⁴⁰ See *id.* at 27, 43 ¶ 49.

⁴¹ See *supra* Part II.

⁴² See *Garland*, 21 N.E.3d at 44 ¶ 53.

cular, the CFI would need to expand the scope of the flight review substantially.⁴³ The CFI would also have to think about the nature and breadth of the review of Part 91 regulations, of the weather conditions to be discussed, and about keeping detailed records.⁴⁴ These are realistic concerns for any CFI who reads the Advisory Circular.

If a pilot were involved in a significant accident, the most likely claim against a CFI who administered a flight review to the pilot after the date of issuance of AC 61-98C would be that the CFI did not do all of the things the Advisory Circular recommended and that, therefore, he failed to comply with Section 61.56, with resulting injury; the plaintiff would have to allege and prove that the failure caused the accident or proximately contributed to it, depending on the standard for liability under the applicable state law.⁴⁵

Violation of a FAR can be the basis for generating a rebuttable presumption of negligence.⁴⁶ If a plaintiff presents plausible expert evidence (and perhaps even if he or she does not) that in the case of the accident pilot Section 61.56 required the CFI to take additional steps described in the Advisory Circular, a court might conclude that the departure from the Advisory Circular is sufficient to generate an issue of fact for a jury to decide. Without an allegation that the flight review was inadequate, it is not likely that a plaintiff could successfully advance a negligent instruction claim premised solely on the assertion that the flight review constituted instruction.⁴⁷ Case law dealing with instructor

⁴³ U.S. Dep't of Transp., FAA, Advisory Circular 61-98C ¶ 4-2 (Nov. 20, 2015).

⁴⁴ *Id.* ¶ 4-3.

⁴⁵ See *Garland*, 21 N.E.3d at 44–45 ¶ 54.

⁴⁶ See, e.g., *Steering Comm. v. United States*, 6 F.3d 572, 576 (9th Cir. 1993) (discussing the effect of a federal regulatory violation under California law and applying a rebuttable presumption of negligence from the violation if it caused the injury and “the statute, ordinance, or regulation was intended to protect the class of person or property injured.”); accord *Avemco Ins. Co. v. Elliott Aviation Serv.*, 86 F. Supp. 2d 824, 829 (C.D. Ill. 2000) (applying Illinois law that “violation of a statute or ordinance designed for the protection of human life or property is *prima facie* evidence of negligence” and citing *French v. City of Springfield*, 357 N.E.2d 438, 440 (Ill. 1976)).

⁴⁷ See *Waugh v. Morgan Stanley & Co.*, 966 N.E.2d 540, 551–554 (Ill. App. Ct. 2012) (discussing the case law in other jurisdictions that reject such claims, and following that case law in Illinois). Courts generally hold that negligent instruction claims against flight instructors do not state a viable cause of action. See *id.* Claims of actual negligence in the course of providing a flight review or other instructional flight have been found to state claims. See *Avemco Ins. Co.*, 86 F. Supp. 2d at 827, 831 (finding that the flight review constituted instruction and

liability is, therefore, also not likely to be relevant to a claim based on an allegedly inadequate flight review.⁴⁸

IV. WHAT OPTIONS ARE AVAILABLE TO THE CFI?

When a flight review applicant has multiple ratings or flies in a variety of flight conditions (or may do so), what options does the CFI have to limit his or her potential liability in the event of a subsequent accident involving the pilot?

One option is only to participate in flight reviews for pilots known to the instructor to be engaged in one specific type of flying and who have only a single rating. For such a pilot, the CFI may conduct and document the flight review by addressing all of the many possible aspects of that pilot's flight activities.⁴⁹ While that approach provides no assurance of avoiding claims and potential liability, it does reduce the risk.

Not participating in flight reviews may be an acceptable solution in many cases. Indeed, the Advisory Circular recommends that pilots consider the FAA's WINGS program, which provides a substitute for a flight review without an instructor sign-off as such.⁵⁰ Instead, a pilot who has successfully completed three FAA-approved flight activities with a CFI and participated on his or her own in three web-based or live knowledge programs in a twelve-month period is issued a certificate that substitutes for the flight review.⁵¹

The required flight activities are defined by the FAA and consist of discrete, limited tasks from the practical test standards for a rating held by the pilot.⁵² For a pilot holding an airplane, single-engine land rating, for example, required tasks could include demonstrating proficiency in short-field takeoffs and maximum performance climbs, which are specific, focused tasks

holding a flight instructor liable for damages resulting from an off-airport landing following a simulated engine failure in the course of a flight review).

⁴⁸ See *Lunsford v. Tucson Aviation Corp.*, 240 P.2d 545, 546–47 (Ariz. 1952) (where the Arizona Supreme Court stated that the “general rules governing tort liability and negligence are applicable to airplane accident cases” but applied, instead, a common carrier’s duty because the defendant conceded that was the relevant standard).

⁴⁹ See U.S. Dep’t of Transp., FAA, Advisory Circular 61-98C ¶ 4-3 (Nov. 20, 2015).

⁵⁰ *Id.* ¶¶ 1-7, 4-1.

⁵¹ See FAA, WINGS PILOT PROFICIENCY PROGRAM USER’S GUIDE TC 11-0007 ¶¶ 4.3, 4.7, 5, https://www.faa.gov/air_traffic/tips_and_advisories/atd/11-0007 [https://perma.cc/J23M-WEFC].

⁵² *Id.* ¶¶ 1.1, 9.6, 9.8.

with defined standards for successful completion.⁵³ Thus, a CFI can limit his activity to approval of three specific sets of flight activities undertaken by an applicant without assuming any duty to determine performance on other maneuvers or to inquire about all the potential types of flying the pilot might do, where he might go, or whether he may fly in different or challenging conditions.⁵⁴ The CFI's signoff in the WINGS Program is limited to the specified tasks undertaken, without any crystal ball obligations or duty to inquire.⁵⁵ Moreover, the CFI has no responsibility to determine that the pilot is familiar with the regulations of Part 91 in any respect.⁵⁶ That requirement is satisfied by the pilot taking and passing three knowledge activities, which include FAA-approved regulatory and other content.⁵⁷

One can argue that the revised Advisory Circular makes the CFI's flight review tasks so potentially onerous as a means to discourage flight reviews and, instead, to encourage participation in the WINGS Program, which is modeled expressly on the recurrent training approach used by the airlines. The Advisory Circular's approach to the flight review is essentially open-ended in terms of maneuvers and regulations on which the CFI is urged to examine the pilot.⁵⁸ The WINGS Program may go too far in the opposite direction. Its approach limits maneuvers to only those selected by the pilot from the menu provided by the FAA and divorces the CFI entirely from the pilot's review of the operating regulations of Part 91.⁵⁹

For those CFIs who do not refer most of their flight review applicants to the WINGS Program, and who provide flight reviews for any but the most standard and relatively simple pilot profiles, the Advisory Circular provides a road map for a plaintiff to later attempt to shift responsibility to the CFI if the pilot is involved in an accident arguably attributable to some aspect of his flying that might have been covered in the flight review, but

⁵³ *Id.* ¶ 4.8.

⁵⁴ *See id.* ¶¶ 4.8, 9.4.

⁵⁵ *See id.*

⁵⁶ *See id.* ¶ 1.3.

⁵⁷ *See id.* ¶ 5.

⁵⁸ *See* U.S. Dep't of Transp., FAA, Advisory Circular 61-98C ¶¶ 4-2, 4-3 (Nov. 20, 2015).

⁵⁹ *See* FAA, WINGS PILOT PROFICIENCY PROGRAM USER'S GUIDE TC 11-0007 ¶¶ 1.3, 4.8, 9.4, https://www.faasafety.gov/documents/Wings_Manual.pdf [<https://perma.cc/J23M-WEFC>].

which was not.⁶⁰ Other than a very extensive (and expensive), thoroughly documented flight review that focuses on all areas in which the pilot may operate and all regulations that may apply to those operations, the CFI may have a difficult time rebutting an argument that something important was missed in the flight review that allegedly accounted for a subsequent accident.

⁶⁰ See U.S. Dep't of Transp., FAA, Advisory Circular 61-98C ¶ 4-2 (Nov. 20, 2015).

**COMPETITION AND SUBSIDIES
IN AIR TRANSPORT LIBERALIZATION—
THE UAE-NORTH AMERICA DISPUTE**

RACHID TIROUAL*

ABSTRACT

Subsidy allegations against the three major Middle-Eastern carriers—Emirates Airlines, Etihad Airways, and Qatar Airways—have been brought by the three major U.S. carriers—American Airlines, Delta Air Lines, and United Airlines. The latter claim that the Gulf trio receive letters of credit and subsidies from their governments. They claim also that their rivals take passengers and revenues from U.S. carriers and force them to reduce, terminate, or forego services on international routes.

This article rationalizes the ongoing debate without arguing whether the subsidy allegations are founded or not. It seeks to understand the basic rationale behind any findings and conclusions drawn by the different stakeholders that are involved or concerned by the subject. It is important to shed light on the conflicts of interests that might harm air transport development as a whole, and hence the fundamental right of the people: freedom of movement and, more specifically, the needs of the people for “efficient and economical air transport” prescribed by Article 44 of the Convention on International Civil Aviation.¹

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¹ Int’l Civ. Aviation Org. [ICAO], Convention on International Civil Aviation, art. 44, ICAO Doc. 7300/8, (8th ed. 2000) [hereinafter Chicago Convention]. The Convention came into force Apr. 4, 1947. *Id.* at 1, n.1.

The focus is on the North American region. The air transport policies and competitive issues are addressed from different national and international perspectives, specifically, the International Civil Aviation Organization (ICAO), the World Trade Organization (WTO), national civil aviation authorities, and for-profit organizations. The analysis is based mainly on scientific data and legal and regulatory aspects, which are discussed through a case study of the United States and Canada on the one hand and the United Arab Emirates (UAE) on the other.

I. INTRODUCTION

THE POLICIES AND regulations which have governed the air transport industry for several decades have various motivations to each country. However, unnecessarily restrictive regulations may have led to significant losses of economic efficiency, and thereby a failure to safeguard an efficient and viable air transportation to the largest possible proportion of the population. In other words, a failure to “[m]eet the needs of the peoples of the world for . . . efficient and economical air transport.”²

Economic and social benefits have been pointed out as the very essence of air transport liberalization, which has been an engine and a catalytic tool of socioeconomic development within the aviation industry.³ Connectivity has been identified as a social benefit and considered a secondary effect of liberalization.⁴

What is considered by some stakeholders as a benefit occurring from liberalization might be perceived by others as a threat. Not everyone is convinced of the effects or side effects of competition in air transport, which is the driving force of liberalization.

One of the fundamental rules of air transport regulation is to make sure that international air transport services are established “on the basis of equality of opportunity and operated soundly and economically.”⁵ More specifically, every contracting State *should* have “a fair opportunity to operate international air-

² *Id.* at 20.

³ Air Transp. Res. Soc’y, Air Transportation Liberalization & the Economic Development of the Countries 3 (ICAO, Working Paper No. 189, 2016), http://www.icao.int/Meetings/a39/Documents/WP/wp_189_en.pdf [https://perma.cc/Y7YC-C5Z2].

⁴ *Id.* at 4.

⁵ Chicago Convention, *supra* note 1, at 1.

lines.”⁶ Article 44 of the Chicago Convention explains the objectives of ICAO, built upon the message of peace and harmony among nations mentioned in the preamble.⁷

According to ICAO,

The liberalization of international air transport regulation continued to evolve at various levels since the 1980s. It is estimated that, in 2012, this involved about 35 [percent] of country-pairs with non-stop scheduled passenger air services and about 58 [percent] of the frequencies offered, through either bilateral “open skies” air services agreements (ASAs) or regional/plurilateral liberalized agreements and arrangements.⁸

In order to assist Member States in liberalizing their air services, ICAO has set up a Template Air Services Agreement (TASA) as a comprehensive framework for optional use by States.⁹ TASA provides proposals of provisions for bilateral and regional/plurilateral ASAs based on the model clauses developed by ICAO and the practice of States in their agreements.¹⁰ The template provides explicit explanations of many clauses throughout its Articles. Likewise, similarities and differences between various wordings are pointed out depending on the desired degree of liberalization (i.e. traditional, transitional, or full liberalization).¹¹

Every ten years, ICAO holds a worldwide air transport conference (ATConf) to examine the key issues and related regulatory framework governing the development of air transport. In 2003, the fifth such event (ATConf/5) “gave widespread support for the concept and contents of the TASA, its optional use by States in their air services relationships and its further development

⁶ *Id.* at 20.

⁷ *Id.* at 1, 20. These objectives include: (1) encouraging the arts of aircraft design and operation for peaceful purposes; (2) meeting the needs of the people of the world through the development of safe, regular, efficient, and economical air transport; and (3) ensuring that the rights of contracting States are respected, and avoiding discrimination between States.

⁸ ICAO SECRETARIAT, REGULATORY & INDUSTRY OVERVIEW 1 (2013), <http://www.icao.int/Meetings/a38/Documents/REGULATORY%20AND%20INDUSTRY%20OVERVIEW.pdf> [<https://perma.cc/T3FB-CBN2>].

⁹ ICAO SECRETARIAT, WORLDWIDE AIR TRANSPORTATION CONFERENCE: CHALLENGES AND OPPORTUNITIES OF LIBERALIZATION 2 (2003), http://www.icao.int/Meetings/ATConf5/Documents/atconf5_wp017_en.pdf [<https://perma.cc/78DG-9GRS>].

¹⁰ ICAO, ICAO TEMPLATE AIR SERVICES AGREEMENTS 1 (2009), <http://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf> [<https://perma.cc/X6SW-JKJ8>].

¹¹ *Id.* at 1–2.

over time by ICAO as 'living documents.'"¹² One decade later, 1,000 delegates and observers from 131 Member States and thirty-nine international organizations attended the most recent conference (ATConf/6) held in Montreal from March 18–22, 2013. Among other things, this conference decided that ICAO should continue to update TASA to keep pace with regulatory evolution.¹³

The main outcomes of ATConf/6 are summarized on the basis of four important points: (1) highlighting air transport policy as an integral element of a sustainable civil aviation system; (2) reaffirming the objective of enhanced liberalization and ICAO's leadership role in developing related policies and tools; (3) opening up new perspectives for the modernization of the global regulatory framework; and (4) providing a basis for concrete actions by ICAO.¹⁴

In 2014, experts from twenty-seven Member States and eighteen observer States and international organizations participated in the twelfth meeting of the Air Transport Regulation Panel (ATRP/12) in order to assist ICAO Secretariat in the ATConf/6 follow-up work.¹⁵ It was noted that the work of the ATRP will take into consideration the interests of all stakeholders, including an effective and sustained participation of States in international air transport and the ICAO Strategic Objectives for 2014-2016. In that regard, the ATRP has committed to undertake several actions and measures, including further development of ICAO's policy and guidance material on international air transport regulation and liberalization. Accordingly, ATRP/12 considered strategic issues relating to air transport liberalization, which include: (1) a long-term vision for international air transport liberalization; (2) an international agreement for Members States to liberalize market access and air carrier ownership and control; (3) regulatory approaches for fair competition; and (4) a set of core principles on consumer protection.¹⁶

¹² *Id.* at 1.

¹³ Council of ICAO, Outcome of the Sixth Worldwide Air Transportation Conference 2, 11 (ICAO, Working Paper No. 56, 2013), http://www.icao.int/Meetings/a38/Documents/WP/wp056_en.pdf [<https://perma.cc/C3V9-P29L>].

¹⁴ *Id.* at 4.

¹⁵ ICAO, REPORT OF THE TWELFTH MEETING OF THE AIR TRANSPORT REGULATORY PANEL (ATRP/12), ii-1, A1–A4 (June 19, 2014), http://www.icao.int/Sustainability/Compendium/Documents/ReferenceDocuments/ATRP12_Report_en.pdf [<https://perma.cc/C5SQ-P4EA>].

¹⁶ *See id.* at ii-1–ii-2.

The International Air Transport Association (IATA)¹⁷ advocates that, as a global industry, aviation liberalization “can provide greater benefits for passengers and allow airlines to operate on a fully commercial basis.”¹⁸ According to IATA, modern, commercial, and global rules are required to achieve further—and fuller—liberalization of the global airline industry.¹⁹ IATA believes that the liberalization of operational (i.e. product market) and ownership (i.e. capital market) restrictions can be a very beneficial process despite the difficulty inherent in such process. In that regard, IATA has analyzed the impact of operational and ownership liberalization in four other industries—retail banking, energy, telecoms, and media—which share close parallels with the air transport industry; all are strategically important, network oriented, and customer-focused. The results showed that further liberalization will have positive impact for both consumers and producers.²⁰

IATA points out the existing restrictive bilateral ASAs as an impediment to the sustainable growth of air transport industry including air traffic services and airline ownership and control by foreign nationals.²¹ IATA notes that the airline industry is “safer, more accessible and more efficient than ever before” thanks to airlines.²² IATA urges governments to bring policy in line with these achievements: “The future success of our industry rests on greater commercial freedom to serve markets where they exist and to merge and consolidate where it makes business sense.”²³

¹⁷ “was founded in Havana, Cuba, in April 1945 At its founding, IATA had 57 members from 31 nations, mostly in Europe and North America. Today it has some 265 members from 117 nations in every part of the globe.” *The Founding of IATA*, IATA, <http://www.iata.org/about/Pages/history.aspx> [<https://perma.cc/L5FM-2EHC>]. IATA is the trade association for the world’s airlines, representing 83% of total air traffic. It supports airline activity and helps formulate industry policy and standards. *About Us*, IATA, <http://www.iata.org/about/Pages/index.aspx> [<https://perma.cc/CMG3-S8AA>]. It is headquartered in Montreal, Canada with Executive Offices in Geneva, Switzerland. *IATA Office Addresses*, IATA, <http://www.iata.org/about/Pages/offices.aspx> [<https://perma.cc/6A9Z-NRW2>].

¹⁸ MARK SMYTH & BRIAN PEARCE, IATA, IATA ECONOMIC BRIEFING NO. 7: AIRLINE LIBERALISATION 6 (2007).

¹⁹ *Id.* at 4, 14.

²⁰ *Id.* at 3–4.

²¹ *Id.* at 7.

²² *Id.* at 3.

²³ *Id.*

Air transport services, which are governed by the WTO,²⁴ are defined in the General Agreement on Trade in Services (GATS), the WTO's multilateral agreement on trade in services.²⁵ These services are set out in the annex of the GATS on air transport services, which excludes from the scope of the GATS: (1) traffic rights, however granted; or (2) services related to the exercise of traffic rights, except aircraft repair and maintenance services, selling and marketing of air transport services, and computer reservation system services.²⁶

However, these services are subject to a regular review by the Council of Trade in Services, with a view to considering the possible further application of the GATS to the sector.²⁷ In that regard, a first review took place from 2000 to 2003, and the second one is ongoing.²⁸ The WTO works in coordination with the ICAO and other stakeholders on various aspects, specifically those related to liberalization of air transport. On that note, the WTO has developed, in preparation for the second review, the Quantitative Air Services Agreements Review (QUASAR) database and methodology, which aims to assess the degree of liberalization of the air transport.²⁹ Moreover, a study was conducted by the ICAO and the WTO in 2005 to develop the Essential Service and Tourism Development Route Scheme (ESTDR), and hence institutional mechanisms to support airlines willing

²⁴ The WTO is a global international organization that deals with the rules of trade between its 159 member states. See *What is the WTO?*, WTO, https://www.wto.org/english/thewto_e/whatis_e/whatis_e.htm [<https://perma.cc/YS7U-FMGZ>]. The WTO acts as conductor of negotiations of trade agreements, a tribunal for dispute settlement, a monitor of trade policies, and a trainer to build trade capacity. See *The Four Roles of the WTO*, WTO, https://www.wto.org/english/news_e/infocenter_e/brief_roles_e.doc [<https://perma.cc/PB5Q-LT75>].

The WTO acts as a global police. Between 1995 and 2013, the organization received more than 400 trade disputes between member states. 75% of these cases have been resolved by informal consultations between the plaintiffs and defendants. Countries concerned have generally adopted the recommendations of the WTO. See CHARLES W. L. HILL ET AL., *GLOBAL BUSINESS TODAY* 211 (9th ed. 2016).

²⁵ *Air Transport Services*, WTO, https://www.wto.org/english/tratop_e/serv_e/transport_e/transport_air_e.htm [<https://perma.cc/TL8X-RSX6>].

²⁶ Marrakesh Agreement Establishing the World Trade Organization, Annex 1B: Annex on Air Transport Services, Apr. 15, 1994, 1867 U.N.T.S. 154 [hereinafter Marrakesh Agreement, Annex 1B].

²⁷ *Id.*

²⁸ *Air Transport Services*, *supra* note 25.

²⁹ *Id.*

to provide certain services of a public service nature.³⁰ The QUASAR methodology and the role of the WTO in regard to competition issues and commercial disputes are discussed later in this Article.

Unlike the international organizations, the objectives and principles of the air transport liberalization from the perspectives of national authorities and airlines, considered separately, might vary drastically at large, depending upon the interests of each stakeholder. What is considered by one as a great benefit might be perceived by another as a threat. This is more evident when conflicts occur between parties, which can be either national authorities (e.g. political disputes, conflicts with other departments within the same State) or airlines (e.g. disputes on competition). Neither ICAO nor IATA have authority over the national civil aviation authorities and airlines when it is a matter of the level of market access.

II. AIR TRANSPORT LANDSCAPE IN THE UNITED STATES, CANADA, AND THE UNITED ARAB EMIRATES

A. UNITED STATES

The United States is one of the best examples of market liberalization. It has high quality statistics on air travel because of its size and the relatively lengthy period since it deregulated its domestic market in the late 1970s. Moreover, its “airports have been most active in pursuing new services, and in evaluating the economic impacts of aviation.”³¹

Over the past decade, the United States has been a nexus for economic growth and air transport development. Between 1996 and 2010, “[U.S.] gross domestic product (GDP) per capita [grew] by approximately 27% [and] [U.S.] air passenger-miles for international and domestic travels . . . increased by 52% and 32%, respectively.”³² According to the World Economic Forum

³⁰ ICAO, *A Study of an Essential Service and Tourism Development Route Scheme 2* (2005), http://www.icao.int/sustainability/EssentialServicesStudy/EssentialServicesStudy_en.pdf [<https://perma.cc/8MP3-PANG>].

³¹ INTERVISTAS CONSULTING, *ECONOMIC IMPACT OF AIR SERVICE LIBERALIZATION* 10 (2006), http://www.intervistas.com/downloads/Economic_Impact_of_Air_Service_Liberalization_Final_Report.pdf [<https://perma.cc/YG6B-6623>].

³² Junwook Chi & Jungho Baek, *Dynamic Relationship Between Air Transport Demand and Economic Growth in the United States: A New Look*, 29 *TRANSPORT POL'Y* 257, 257 (2013).

(WEF), “economic growth plays a crucial role in the expansion of both air passenger and freight services.”³³

In 2014, the U.S. aviation industry generated a total of 5.7 million jobs, of which 2.2 million were direct.³⁴ It also had an impact of \$561.7 billion on GDP, of which \$118 billion were in the tourism industry.³⁵ Moreover, according to the U.S. Travel Association, domestic and international travelers spent \$927.9 billion directly and spurred an additional \$1.2 trillion in other industries.³⁶

Open Skies agreements have vastly expanded international passenger and cargo flights to and from the United States. According to the Department of Transportation, Open Skies agreements with over 100 partners have been achieved from every region of the world and at every level of economic development: “America’s Open Skies policy has gone hand-in-hand with U.S. airline globalization. By allowing U.S. air carriers unlimited market access to our partners’ markets and the right to fly to all intermediate and beyond points, Open Skies agreements provide maximum operational flexibility for airline alliances.”³⁷

However, with the rise of the Middle Eastern carriers and other foreign carriers (e.g. Norwegian Air Shuttle), Open Skies agreements “are under attack from an unlikely alliance of domestic airlines and unions.”³⁸ Legacy airlines, “which have traditionally backed open-skies policies to expand their markets,” are now claiming the re-evaluation of the objectives of these agreements because of alleged unfair competition from some major foreign carriers.³⁹

³³ *Id.* at 260.

³⁴ AIR TRANSPORT ACTION GROUP, AVIATION BENEFITS BEYOND BORDERS 56 (2014), http://aviationbenefits.org/media/26786/ATAG_AviationBenefits2014_FULL_LowRes.pdf [<https://perma.cc/VQ4E-9TC2>].

³⁵ *Id.*

³⁶ U.S. TRAVEL ASS’N, *U.S. Travel Answer Sheet—Facts About a Leading American Industry That’s More Than Just Fun* (2014), [https://www.ustravel.org/sites/default/files/Media%20Root/Document/US_Travel_AnswerSheet_DEC2015_final%20\(2\).pdf](https://www.ustravel.org/sites/default/files/Media%20Root/Document/US_Travel_AnswerSheet_DEC2015_final%20(2).pdf) [<https://perma.cc/YD2F-N7RD>].

³⁷ *Open Skies Agreements*, U.S. DEP’T OF STATE, <http://www.state.gov/e/eb/tra/ata/> [<https://perma.cc/H4NF-VVJN>].

³⁸ Jad Mouawad, *Open-Skies Agreements Challenged*, N.Y. TIMES, Feb. 6, 2015, https://www.nytimes.com/2015/02/07/business/us-airlines-challenge-open-skies-agreements.html?_r=0 [<https://perma.cc/U8M9-QQVS>].

³⁹ *Id.*

Operation of airports by municipal and quasi-municipal governments is unique to the United States. The airport workers are government employees and the airport's budget is subject to city or municipal approval.⁴⁰ Generally speaking, airports are subject to a heavy regulatory framework dating back to the Nixon era.⁴¹ Also, U.S. airports have traditionally been heavily "influenced by competitive private interests, particularly by airlines that have had the power . . . to shape virtually all the major aspects of airport development and management."⁴²

Long-haul travel experienced a 40% growth from 2000 to 2010, while the domestic market showed just a 2% growth during the same period.⁴³ In 2014, the United States held the top rank regarding the number of operating airlines, which was 223. It ranked second in overall air transport infrastructure, and ninth in terms of quality. However, it ranked 128th out of 141 countries in price competitiveness related to ticket taxes and airport charges, being among the highest in the world.⁴⁴

Even though U.S. airports are essential for the country's development, they suffer from heavy government controls and frameworks and lack of revenues. This is due to the Federal Aviation Administration (FAA) regulated fares. According to the WEF Report, this has caused the United States to fall to the thirty-first position in airport development.⁴⁵ The United States restricts foreign ownership of domestic and international airlines to 25%, though it "has allowed up to 49% foreign ownership on a case-by-case basis."⁴⁶

⁴⁰ MIKE TRETHAWAY, AIRPORT OWNERSHIP, MANAGEMENT & PRICE REGULATION 4–6 (2001), http://www.intervistas.com/downloads/Airport_Ownership_Management_and_Price_Regulation.pdf [<https://perma.cc/KCZ4-5L3L>].

⁴¹ See generally THERESA L. KRAUS, U.S. DEP'T OF TRANSP., FEDERAL AVIATION ADMINISTRATION: A HISTORICAL PERSPECTIVE, 1903–2008 25–44 (2008), https://www.faa.gov/about/history/historical_perspective/media/historical_perspective_ch4.pdf [<https://perma.cc/3YDA-VK9P>].

⁴² RICHARD DE NEUFVILLE, AIRPORT PRIVATIZATION ISSUES FOR THE UNITED STATES 5 (1999).

⁴³ Kate Rice, *U.S. Travel Associations Dow Details Impact of 9/11 on Travel Business*, TRAVEL PULSE, Aug. 24, 2011, <http://www.travelpulse.com/news/features/us-travel-associations-dow-details-impact-of-911-on-travel-business.html> [<https://perma.cc/ZB2T-D8VS>].

⁴⁴ WORLD ECON. FORUM, THE TRAVEL & TOURISM COMPETITIVENESS REPORT 2015 339 (Roberto Crotti & Tiffany Misrahi, eds., 2015), http://www3.weforum.org/docs/TT15/WEF_Global_Travel&Tourism_Report_2015.pdf [<https://perma.cc/S9UR-QJWQ>].

⁴⁵ *Id.* at 43.

⁴⁶ DAVID GILLEN, COMPETITION POLICY REVIEW PANEL, FOREIGN OWNERSHIP RESTRICTIONS IN THE CANADIAN AVIATION INDUSTRY: A REVIEW AND ASSESSMENT 2

During the period between 2011 and 2015, as the economy was returning from the 2008 economic crisis, the financial results of U.S. airlines continued to show improvement as the industry was being restructured. In 2015, the industry recorded one of the strongest profitability reports; “the top 10 U.S. scheduled passenger airlines, based on operating revenue, reported an after-tax net profit of \$24.2 billion . . . up from a profit of \$7.3 billion in 2014.”⁴⁷ These airlines included American Airlines, Delta, United, Southwest, JetBlue, Alaska, Hawaiian, Spirit, SkyWest, and Frontier.⁴⁸ They “carried 81.9 percent of U.S. airlines’ scheduled service passengers in 2015 and accounted for 94.6 percent of the scheduled passenger airline after-tax net profit.”⁴⁹

It is expected that in the next twenty years, due to a long-term nationwide economic recovery, passenger and cargo traffic will experience annual growths of 2.7% and 3.8%, respectively.⁵⁰ On the other hand, some of the major issues looming include (1) allegations by U.S. airlines that the three major Middle Eastern carriers are violating competition rules; and (2) labor claims by workers at Southwest and Delta that demand better pay and reject recent labor contracts.⁵¹

Chapter 11 of the United States Bankruptcy Code describes the requirements and process of reorganization of the business affairs and assets of debtors, in this case financially troubled corporations. In that sense, a reorganization plan is set to assess the debtor’s fulfillment of its obligations. Chapter 11 presents an opportunity for the company to avoid bankruptcy and allows the

(2008), [https://www.ic.gc.ca/eic/site/cprp-gepmc.nsf/vwapj/David_Gillen.pdf/\\$FILE/David_Gillen.pdf](https://www.ic.gc.ca/eic/site/cprp-gepmc.nsf/vwapj/David_Gillen.pdf/$FILE/David_Gillen.pdf) (“In May 2003, the [U.S.] government proposed raising the allowable percentage of total foreign voting stock ownership to 49%, but this is still being debated.”) [<https://perma.cc/3VUW-N6FE>].

⁴⁷ U.S. DEP’T OF TRANSP., BUREAU OF TRANSP. STATISTICS (BTS), BTS RELEASES 2015 AIRLINE FINANCIAL DATA 2 (2016), http://www.rita.dot.gov/bts/press_releases/bts026_16 [<https://perma.cc/3TEY-L8B9>].

⁴⁸ *Id.* at 6.

⁴⁹ *Id.* at 2.

⁵⁰ U.S. DEP’T OF COMMERCE, OFFICE OF TRAVEL AND TOURISM INDUS., *National Travel & Tourism Strategy Task Force on Travel & Competitiveness* (2012), <http://travel.trade.gov/pdf/national-travel-and-tourism-strategy.pdf> [<https://perma.cc/24MX-KLWA>]; FED. AVIATION ADMIN., *FAA Aerospace Forecast: Fiscal Years 2016–2036*, at 9, 19 (2016) https://www.faa.gov/data_research/aviation/aerospace_forecasts/media/FY2016-36_FAA_Aerospace_Forecast.pdf.

⁵¹ Susan Carey, *Three Big U.S. Airlines Allege Additional State Subsidies to Qatar Airways*, WALL ST. J., June 29, 2016; Susan Carey, *Dark Clouds Loom for Airlines Even as Their Profits Take Off*, WALL ST. J., Aug. 18, 2015, at A1.

creditors to receive some form of payment for amounts owed to them by the debtors.⁵² However, it is worth noting that debtors need not be “insolvent” to file a voluntary Chapter 11 petition.⁵³

It is deemed to be in debtor-company’s interest to file early for Chapter 11 because it provides it with “wide-ranging and valuable powers.”⁵⁴ These include the right to “disclaim, adopt or assign contracts,” and most importantly, “the ability to sell assets and borrow money.”⁵⁵ In fact, the directors of these debtor-companies remain responsible to all constituents; they “may act to maximize the values for all, including negotiating on behalf of existing equity-holders.”⁵⁶ Therefore, the debtor is enabled to “address its business and operational issues, including its relationship with unions and its pensions.”⁵⁷ In contrast, in the United Kingdom for instance, debtors do not have such powers under its administration procedure.⁵⁸ On top of that, it is argued in large Chapter 11 cases that existing management have benefited from generous compensation and severance incentives in order to remain with the company during the reorganization process. In another vein, it is claimed that debtors could use Chapter 11 as a delaying tactic when dealing with creditors and opponents in litigation.⁵⁹ Perhaps that is the reason why the Bankruptcy Code was amended in 2005 to “include an 18 month ‘drop-dead date’ for exclusivity in Chapter 11 cases,” and “restrict significantly the circumstances under which incentives can be granted.”⁶⁰

According to the United States Government Accountability Office (GAO), airline bankruptcies’ overall duration averages

⁵² *Ch. 11 – Bankruptcy Basics*, U.S. COURTS, <http://www.uscourts.gov/services-forms/bankruptcy/bankruptcy-basics/chapter-11-bankruptcy-basics> [https://perma.cc/E6XP-JE4Z].

⁵³ JONES DAY, COMPARISON OF CH. 11 OF THE U. S. BANKRUPTCY CODE WITH THE SYSTEM OF ADMINISTRATION IN THE U. K., THE RESCUE PROCEDURE IN FRANCE, INSOLVENCY PROCEEDINGS IN GERMANY, AND THE EXTRAORDINARY ADMINISTRATION FOR LARGE INSOLVENT COMPANIES IN ITALY 8 (2007), <http://goo.gl/In4tb9> [https://perma.cc/5FMA-VXBX] [hereinafter COMPARISON OF CH. 11].

⁵⁴ *Id.* at 14.

⁵⁵ *Id.*

⁵⁶ *Id.* at 13.

⁵⁷ *Id.* at 14.

⁵⁸ *Id.*

⁵⁹ *Id.* at 10.

⁶⁰ *Id.* at 10, 13.

714 days. This duration is higher than the average of all industries, which was 518 days.⁶¹

The longest and costliest bankruptcy in aviation history was United Airlines, which reemerged in 2006 after 1,150 days in bankruptcy.⁶² The airline was able to slash costs by \$7 billion per year and cut out \$8 billion of its debt, but it still had to deal with \$17 billion of the remaining debt. Furthermore, a new management incentive plan was adopted following the period of reorganization despite the “angry” opposition of the union; the disputed plan “reward[ed] 400 executives with a total of 10 million stock shares, 8% of the reorganized company.”⁶³

B. CANADA

“Historically, Transport Canada approached the issue of bilateral air service negotiations on an ad hoc basis that featured incremental negotiations.”⁶⁴ In November 2006, Canada adopted a new approach to international air access named Blue Sky by Transport Canada.⁶⁵ The criteria to be considered in determining Canada’s negotiating priorities include the following factors:

⁶¹ U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-05-945, COMMERCIAL AVIATION: BANKRUPTCY AND PENSION PROBLEMS ARE SYMPTOMS OF UNDERLYING STRUCTURAL ISSUES 23–24 (2005).

⁶² PAUL STEPHEN DEMPSEY, AIRLINE BANKRUPTCY: THE POST-DEREGULATION EPIDEMIC 33 (2012), https://www.mcgill.ca/iasl/files/iasl/aspl613_paul_dempsey_airlinebankruptcies2012.pdf [<https://perma.cc/Z4WM-G8Q4>].

⁶³ Marilyn Adams, *Has United Changed Enough?*, USA TODAY, Jan. 23, 2006, http://usatoday30.usatoday.com/money/biztravel/2006-01-22-united-cover-usat_x.htm [<https://perma.cc/BD5D-WQZ2>].

⁶⁴ LIBERALIZATION IN AVIATION: COMPETITION, COOPERATION AND PUBLIC POLICY 446 (PETER FORSYTH ET AL. eds., 2013).

⁶⁵ *Id.* Blue Sky policy has the following objectives:

“[p]rovide a framework that encourages competition and the development of new and expanded international air services to benefit travellers, shippers, and the tourism and business sectors[;] [p]rovide opportunities for Canadian airlines to grow and compete successfully in a more liberalized global environment[;] [e]nable airports to market themselves in a manner that is unhindered by bilateral constraints to the greatest extent possible[;] [s]upport and facilitate Canada’s international trade objectives[;] [s]upport a safe, secure, efficient, economically healthy and viable Canadian air transportation industry.”

The following principles guide the approach of the Blue Sky policy: “[r]ecognize that air transportation is a direct contributor to a dynamic economy and is a leading trade and tourism facilitator[;] [m]arket forces should determine the price, quality, frequency and range of air services options[;] Canadian carriers should have the opportunity to compete in international markets on a reasonably

Canadian airline and airport priorities and interests; [l]ikelihood and extent of new Canadian and foreign carrier services, giving preference where early start-up of air services is planned; [s]ize and maturity of the air transportation markets and potential for future growth; [f]oreign government requests; Canada's international trade objectives; [s]afety and security issues; [f]oreign relations; and [b]ilateral irritants and disputes.⁶⁶

The Blue Sky policy emphasizes that “[a]s a primary objective, Canada will seek to negotiate reciprocal ‘Open Skies’-type agreements, similar to the one negotiated with the [United States] in November 2005, where it is deemed to be in Canada’s overall interest.”⁶⁷

“Until the early 1990s [Canadian] airports were managed by the federal government.”⁶⁸ Since then, Canadian airports have been corporatized. The government still maintains ownership of the airports through emphyteutic leases however, which “set out the governance and consultation mechanisms under which the airports are run” by not-for-profit entities.⁶⁹ Thus, these entities bare the operating and funding responsibilities under the long-term leases.⁷⁰

According to Daniel-Robert Gooch, president of the Canadian Airports Council (CAC): “Canada essentially has a ‘user pay PLUS’ system for aviation in which users pay for airport infrastructure, security screening and air traffic control, plus a little extra to the federal government.”⁷¹

Gooch noted that over \$19 billion have been invested in airport improvements under this system since 1992.⁷² As a result, the WEF in 2015 ranked Canada’s overall air transport infrastructures first worldwide ahead of the United States and the

level playing field[;] [a]ir liberalization initiatives will continue to be guided by safety and security considerations.”

See TRANSP. CAN., BLUE SKY: CANADA’S NEW INTERNATIONAL POLICY 2 (2006), <https://www.tc.gc.ca/media/documents/policy/bluesky.pdf> [<https://perma.cc/Y74U-Q9CL>].

⁶⁶ *Id.* at 3.

⁶⁷ *Id.*

⁶⁸ Daniel-Robert Gooch, *Why Canada’s Airport Model is Working for Taxpayers*, THE GLOBE AND MAIL (Mar. 7, 2014), <http://www.theglobeandmail.com/globe-debate/why-canadas-airport-model-is-working-for-taxpayers/article17368507/> [<https://perma.cc/7ETR-8CKY>].

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² *Id.*

UAE, respectively.⁷³ Canadian airports ranked sixteenth in terms of quality.⁷⁴ However, the same report ranked Canada 130th out of 141 countries, among the highest in the world, in terms of price competitiveness related to ticket taxes and airport charges.⁷⁵

“Canada limits foreign ownership of Canadian air carriers to 25%.”⁷⁶ In the current aviation market, Air Canada, Air Transat, WestJet, and Porter Airlines, which operate scheduled and charter services domestically and abroad, represent the main air carriers in Canada.⁷⁷ “Air Canada is extending its global reach through its membership in Star Alliance and through its participation in a transatlantic revenue sharing joint venture with United Airlines and Deutsche Lufthansa AG, referred to as A++.”⁷⁸ Furthermore, the flag carrier often considers code-sharing as a “preliminary step to either achieve more comprehensive Joint Ventures . . . or in some cases, to introducing [its] own aircraft on a new route.”⁷⁹ It is worthy to note that in 2003, the biggest issue looming was the financial difficulties faced by Air Canada.⁸⁰ At that time, the national carrier managed to keep its membership in Star Alliance thanks to its partner United Airlines, though airlines are required to meet certain financial obligations to maintain their membership.

Similar to Chapter 11 in the United States, the Companies’ Creditors Arrangement Act (CCAA) allows financially troubled Canadian corporations to restructure their financial affairs

⁷³ THE TRAVEL & TOURISM COMPETITIVENESS REPORT 2015, *supra* note 44, at 113, 335, 339.

⁷⁴ *Id.* at 113.

⁷⁵ *Id.*

⁷⁶ GILLEN, *supra* note 46, at 1.

⁷⁷ Brian Spiegel, *List of Canadian Airlines*, USA TODAY, <http://traveltips.usatoday.com/list-canadian-airlines-63316.html> [<https://perma.cc/7DU4-RE46>].

⁷⁸ AIR CANADA, 2013 MANAGEMENT’S DISCUSSION AND ANALYSIS OF RESULTS OF OPERATIONS AND FINANCIAL CONDITION 4 (2014), https://www.aircanada.com/content/dam/aircanada/portal/documents/PDF/en/quarterly-result/2013/2013_MDA_q4.pdf [<https://perma.cc/HS8K-HG5J>].

⁷⁹ Calin Rovinescu, CEO, Air Canada, Remarks to the Vancouver Board of Trade 12 (Nov. 13, 2013), https://www.aircanada.com/content/dam/aircanada/portal/documents/PDF/speeches-presentations/en/vancouverBoard_2013.pdf [<https://perma.cc/K4TH-AFEK>].

⁸⁰ Keith McArthur, *How Creditors Saved Air Canada*, THE GLOBE AND MAIL (May 3, 2004), <http://www.theglobeandmail.com/report-on-business/how-creditors-saved-air-canada/article1137095/> [<https://perma.cc/WRU6-EFVS>].

through a formal Plan of Arrangement.⁸¹ In contrast with Chapter 11, among other things, a Canadian debtor must be “insolvent” and “have in excess of C\$5-million in liabilities” to be able to make a voluntary application for relief under the CCAA.⁸² Canadian “[c]orporations that do not reach this \$5 million threshold can utilize the Division I Proposal under the Bankruptcy and Insolvency Act.”⁸³ Moreover, “the stay of proceedings is not automatic” in Canada.⁸⁴ Nevertheless, “a broad initial stay up to a maximum of 30 days” can be issued by courts, typically exercising their discretion.⁸⁵ In addition, while there is no time limit on the stay under Chapter 11, an extension of the initial stay can be granted upon application to the Court under the CCAA. The “debtor must demonstrate that it is acting in good faith and with due diligence.”⁸⁶ Another point concerns the legal bankruptcy estate, which is created upon the filing of a Chapter 11 petition, but is not under the CCAA.⁸⁷

“Air Canada entered bankruptcy in April 2003, emerging in September 2004.”⁸⁸ Among the benefits gained from CCAA Protection, the carrier was able to cut its costs by \$2 billion, which included “\$1 billion labour and benefits; \$0.6 billion in aircraft lease rentals (49% cut in cash rent from 2003 to 2009); and \$0.4 billion in supplier contracts and other.”⁸⁹

C. UNITED ARAB EMIRATES (UAE)

According to the International Monetary Fund (IMF), UAE’s non-oil GDP was expected to grow at 4.4% in 2015,⁹⁰ and it grew

⁸¹ *What is CCAA?*, PRICEWATERHOUSE COOPERS CANADA, <http://www.pwc.com/ca/en/services/insolvency-assignments/what-is-ccaa.html> [https://perma.cc/3ND2-FS2C].

⁸² BLAKE, CASSELS & GRAYDON LLP, CHAPTER 11 AND CCAA: A CROSS-BORDER COMPARISON 1 (2013), http://www.blakesfiles.com/Guides/Blakes_Restructuring_and_Insolvency_Canada.pdf [https://perma.cc/D8DG-9Z23] [hereinafter Ch. 11 & CCAA].

⁸³ *What is CCAA?*, *supra* note 81.

⁸⁴ CHAPTER 11 AND CCAA, *supra* note 82, at 2.

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Id.* at 3.

⁸⁸ DEMPSEY, *supra* note 62, at 20.

⁸⁹ Aircraft Commerce, *Air Canada’s Post-Bankruptcy Re-Organisation*, 38 AIRCRAFT ANALYSIS & FLEET PLANNING 24 (December 2004/January 2005).

⁹⁰ Waheed Abbas, *UAE’s Non-Oil GDP to Grow at 4.4% in 2015: IMF*, EMIRATES 24/7 (May 5, 2015), <http://www.emirates247.com/business/economy-finance/uae-s-non-oil-gdp-to-grow-at-4-4-in-2015-imf-2015-05-05-1.589693> [https://perma.cc/C9HU-ZPD9].

by 2.5% in 2016.⁹¹ Transport and tourism are fundamental sectors driving the UAE economy in that perspective. Aviation has established itself as a vital contributor to the UAE's economy contributing more than AED 145 billion (\$39.47 billion) or 14.7% of the national GDP.⁹² It is expected to contribute 32% to Dubai's GDP by 2020, according to government estimates.⁹³ Carla Slim, the Middle East and North Africa economist at Standard Chartered bank, explained: "This announcement reflects the success of Dubai's economic strategy. . . . It cements Dubai's position as a major tourist destination in the region but also as a gateway for trade, logistics and regional services."⁹⁴

"The UAE has signed more than 160 [bilateral] . . . ASAs, of which [the] majority are Open Skies arrangements."⁹⁵ Despite this liberal approach, the UAE still has some restrictive ASAs with "limits on capacity, designated airports and, in some cases, approved airlines and pricing."⁹⁶ According to a study conducted by InterVISTAS Consulting, "it is possible that restrictions within an ASA are not due to the policies of the UAE government but due to the policies of the opposite [signatory] country."⁹⁷ Generally, governments require reciprocity when negotiating the terms of a bilateral Air Service Agreement.⁹⁸

⁹¹ *Solid Profitability Seen for Top UAE Banks*, TRADEARABIA (Feb. 14, 2017), http://www.tradearabia.com/news/BANK_320726.html [<https://perma.cc/PB9Q-UNG3>].

⁹² OXFORD ECON., ECONOMIC BENEFITS FROM AIR TRANSPORT IN THE UAE 4, 14 (2011), <https://www.iata.org/policy/Documents/Benefits-of-Aviation-UAE-2011.pdf>

⁹³ *UAE Economy*, UAE EMBASSY, <http://www.uae-embassy.org/about-uae/uae-economy> [<https://perma.cc/ZBE8-GS8D>].

⁹⁴ Mahmoud Kassem, *Aviation Expansion to Give Some Lift to UAE Economic Growth*, THE NATIONAL (Jan. 27, 2015), <http://www.thenational.ae/business/aviation/aviation-expansion-to-give-some-lift-to-uae-economic-growth> [<https://perma.cc/32AG-KXU3>].

⁹⁵ Press Release, Reed Exhibitions, *Open Skies Remains in the Frontline of UAE's Winning Aviation Strategy* (May 14, 2014), <http://www.reedexpo.com/fr/Press-Releases/2014-Press-Releases/Open-Skies-remains-in-the-frontline-of-UAEs-winning-aviation-strategy/> [<https://perma.cc/E6EU-499C>] [hereinafter *Open Skies Remains in the Frontline*].

⁹⁶ INTERVISTAS-EU CONSULTING, *THE IMPACT OF INTERNATIONAL AIR SERVICE LIBERALIZATION ON THE UNITED ARAB EMIRATES (UAE)* iii (2009), <https://www.iata.org/policy/promoting-aviation/liberalization/agenda-freedom/Documents/uae-report.pdf> [<https://perma.cc/X8P6-RWT4>].

⁹⁷ *Id.*

⁹⁸ *Id.*

Dubai is a long-term supporter of Open Skies with over 100 international airlines flying to its international airport.⁹⁹ In fact, the government of Dubai considers the Open Skies policy as a “key component of its economic and trade policy.”¹⁰⁰ According to Mohammed Ahli, Director General of Dubai Civil Aviation Authority:

Dubai is one of the true pioneers of aviation liberalisation having adopted an open skies policy as one of the cornerstones of its economy ever since late Sheikh Saeed bin Maktoum Al Maktoum O.B.E signed the Dubai Commercial Air Agreement with His Majesty’s Government in July 1937, long before Emirates was established in 1985. Access to Dubai, one of the world’s largest and fastest-growing hubs, allows carriers of the world to grow their services and also boost exports and trade to their own markets. For Dubai it gives consumers more choice, stimulates traffic growth and is good for business. Considering that ICAO predicts there will be 6 billion people travelling by air in 2030 compared to 3 billion today. Dubai is well-placed to capitalise on this growth. I am confident that Dubai’s steadfast commitment to Open Skies is a source of inspiration for other countries.¹⁰¹

As a result of the government policy, it is “estimated that \$82 billion have been invested in aviation infrastructure development in the Emirate of Dubai alone since the formation of the UAE in 1971.”¹⁰² The country has six international airports.¹⁰³ Since 2014, Dubai International Airport has “become the world’s busiest in terms of international passenger traffic ahead of London-Heathrow.”¹⁰⁴ With almost 70 million international

⁹⁹ *International and Government Affairs: Connectivity, Competition and Consumer Choice*, EMIRATES, <http://www.emirates.com/english/about/int-and-gov-affairs/international-and-government-affairs-new.aspx> [https://perma.cc/8KZ6-WURZ].

¹⁰⁰ *78 Years with . . . an Open Skies Policy*, 21 INT’L & GOV’T AFF. J. OF EMIRATES 1, 6 (2015), https://cdn.ek.aero/downloads/ek/pdfs/open_sky/OpenSky_21_v3.pdf [https://perma.cc/7NA6-6XRW].

¹⁰¹ *Id.*

¹⁰² Open Skies Remains in the Frontline of UAE’s Winning Aviation Strategy, *supra* note 95.

¹⁰³ *Planning a Trip*, EMBASSY OF THE U.A.E. IN WASHINGTON, D.C., <http://www.uae-embassy.org/about-uae/travel-culture/planning-trip> [https://perma.cc/VL4U-89VF].

¹⁰⁴ Press Release, Airport Council International, ACI World Releases Preliminary World Airport Traffic and Rankings for 2014 - DXB Becomes Busiest Airport for International Passenger Traffic, (Mar. 26, 2015), <http://www.aci.aero/News/Releases/Most-Recent/2015/03/26/ACI—World-releases-preliminary-world-airport-traffic-and-rankings-for-2014—DXB-becomes-busiest-airport-for-international-passenger-traffic-> [https://perma.cc/4CEG-KBT4].

passengers in 2014, Dubai International Airport was ranked the “sixth busiest airport in the world in overall passenger traffic.”¹⁰⁵

The overall air transport infrastructures in the UAE were ranked third worldwide by the WEF, and second in terms of quality.¹⁰⁶ In addition, the UAE ranked twenty-fifth out of 141 countries, among the highest in the world in terms of the price competitiveness related to ticket taxes and airport charges.¹⁰⁷ This is attributed mostly to its world-class international hubs for global air travel.¹⁰⁸

“Foreign ownership and control of airlines in the UAE is restricted to a 49% equity stake.”¹⁰⁹ Four of the UAE’s five national airlines are 100% state-owned: Emirates Airlines, Etihad Airways, Air Arabia, and Fly Dubai.¹¹⁰ Rotana Jet is owned jointly by Amiri Flight (50%) and Abu Dhabi Aviation (50%).¹¹¹ Emirates, followed by Etihad, are by and large the biggest national carriers and two of the major players in the international airlines industry.¹¹² Besides, it is worth noting that the two airlines have different strategic approaches: while Emirates’ strategy is based on the liberalized bilateral ASAs, Etihad favors equity minority interests. Unlike Qatar Airways, Emirates does not belong to an alliance. The airline emphasizes its concerns about the anti-competitiveness of some traditional alliance arrangements.¹¹³ Emirates instead prefers codeshare agreements with potential partners to “reinforce Dubai’s standing as a global hub.”¹¹⁴

¹⁰⁵ *Id.*

¹⁰⁶ THE TRAVEL & TOURISM COMPETITIVENESS REPORT 2015, *supra* note 44, at 335.

¹⁰⁷ *Id.*

¹⁰⁸ *Id.* at 18.

¹⁰⁹ THE IMPACT OF INTERNATIONAL AIR SERVICE ON LIBERALIZATION OF THE UNITED ARAB EMIRATES (UAE), *supra* note 96, at iii.

¹¹⁰ *Id.*; *Company History*, FLYDUBAI, <https://www.flydubai.com/en/information/about-flydubai/company-history> [<https://perma.cc/J55C-BQ4J>].

¹¹¹ *Your Abu Dhabi Guide*, UAE AIRLINES, <http://www.yourabudhabiguide.com/uae-airlines.html> (last visited Jun. 19, 2017); *About Us*, ROTANA JET, <http://www.rotanajet.com/About-us> (last visited Jun. 19, 2017).

¹¹² THE IMPACT OF INTERNATIONAL AIR SERVICE ON LIBERALIZATION OF THE UNITED ARAB EMIRATES (UAE), *supra* note 96, at 13.

¹¹³ Ben Flanagan, *Etihad and Emirates Show Airline Alliances are Outdated*, THE NATIONAL, Sept. 1, 2015, <http://www.thenational.ae/business/aviation/etihad-and-emirates-show-airline-alliances-are-outdated> [<https://perma.cc/YF8R-W678>].

¹¹⁴ *International and Government Affairs: Connectivity, Competition, and Consumer Choice*, *supra* note 99.

D. ALLEGATIONS AGAINST THE MAJOR MIDDLE-EASTERN
CARRIERS IN THE UNITED STATES

The three major U.S. carriers—American Airlines, Delta Air Lines, and United Airlines—claim that their rivals from the Middle East—Qatar Airways, Emirates Airlines, and Etihad Airways—receive letters of credit and subsidies from their governments (in the form of assumption of fuel hedging losses).¹¹⁵ They also claim that the Middle Eastern carriers take passengers and revenues from U.S. carriers, and force them to reduce, terminate, or forego services on international routes.¹¹⁶ Therefore, a fifty-five-page white paper was addressed to the U.S. government by the three U.S. major airlines in January 2015.¹¹⁷

William S. Swelbar, a researcher at Massachusetts Institute of Technology (MIT) and a member of the OneJet Advisory Team, studied in a position paper the impacts of the alleged subsidies at different levels. His analysis was based on the fifty-five-page white paper. According to Swelbar, the first results expected include: (1) the reduction of the U.S. network carriers' [and their alliance partners'] share in key markets (notably, the Middle East and Indian subcontinent); and (2) the shifting of connecting passengers to the Middle-East-traffic diversion.¹¹⁸

Swelbar explained that the Middle Eastern carriers' services threaten the viability of nonstop flights with greater economic impact than connecting flights at the three major airports—Dubai, Abu Dhabi, or Doha. He added: “routes with strong local markets need to rely less on connecting passengers to reach route profitability, enhancing the economic benefits of such service to both communities.”¹¹⁹ Another argument is that small- and medium-sized airports in the United States are negatively impacted by the Middle Eastern carriers, which operate in

¹¹⁵ PARTNERSHIP FOR FAIR AND OPEN SKIES, RESTORING OPEN SKIES: THE NEED TO ADDRESS SUBSIDIZED COMPETITION FROM STATE-OWNED AIRLINES IN QATAR AND THE UAE 1, 27, 28 (2015), <http://www.openandfairskies.com/wp-content/themes/custom/media/White.Paper.pdf> [https://perma.cc/U7MT-3JVV] [hereinafter RESTORING OPEN SKIES].

¹¹⁶ *Id.* at 46.

¹¹⁷ *See generally id.*

¹¹⁸ WILLIAM SWELBAR, VIOLATIONS OF “FAIR AND EQUAL” OPEN SKIES AGREEMENTS THREATEN LARGE AND SMALL AMERICAN COMMUNITIES AND THEIR ACCESS TO THE GLOBAL AIR TRANSPORTATION NETWORK 2 (2015), <http://www.openandfairskies.com/wp-content/uploads/2015/07/Open-Skies-Violations-Threaten-American-Communities.pdf> [https://perma.cc/S7LW-6Y3Z].

¹¹⁹ *Id.* at 6.

nearby hubs and therefore “threaten[] the viability of existing domestic flights.”¹²⁰

Swelbar’s analysis is based on data that certainly show the strong growing position of the Middle Eastern carriers in the U.S. market, yet the alleged subsidies were rather considered as an upheld hypothesis of the study. To the contrary, the veracity of these allegations should have been questioned. In fact, the same reasoning would apply and the same conclusions would be drawn if other competitors of the U.S. airlines were considered as being subsidized. For instance, Ethiopian Airlines, Cathay Pacific, Singapore Airlines, and Kuwait Airways¹²¹ operate fifth freedom routes from some U.S. airports, but so does Emirates, since 2013, by flying from New York to Milan and continuing on to Dubai.

Therefore, Swelbar’s approach is misleading the reader by assuming the allegations against the Middle Eastern carriers are true on the basis of the white paper drawn by the complainants. In fact, Swelbar advocates for the Partnership for Open & Fair Skies, which is a coalition composed of American Airlines, Delta Air Lines, and United Airlines, along with some associations of pilots and flight attendants.¹²²

On the other hand, the fifty-five-page white paper pointed out some alleged anti-competitive financial advantages and irregularities contained in the released financial statements of the Middle Eastern carriers.¹²³ Moreover, the focus was laid on some

¹²⁰ *Id.* at 10.

¹²¹ Kuwait Airways dropped its New York City-to-London route in December 2015 after a discrimination complaint was filed by the U.S. Department of Transportation, which threatened legal action over the carrier’s refusal to sell tickets to Israelis. However, the carrier has since started operating the same route again. Ben Schlappig, *Kuwait Airlines’ Controversial London to N.Y. Flight is Still Operating (Sort Of)*, ONE MILE AT A TIME (Mar. 21, 2016), <http://onemileatatime.boardingarea.com/2016/03/21/kuwait-airways-jfk/> [<https://perma.cc/3BYA-9KSC>].

¹²² *New Report: Violations of Open Skies Threaten Small and Large Communities Across the Nation*, PARTNERSHIP FOR FAIR & OPEN SKIES (July 23, 2015), <http://www.openandfairskies.com/press-releases/violations-of-open-skies-threaten-small-and-large-communities/> [<https://perma.cc/2HXC-GA2L>]. The associations of pilots and flight attendants include the Air Line Pilots Association International, the Allied Pilots Association, the Airline Division of the International Brotherhood of Teamsters, the Association of Flight Attendants-CWA, the Association of Professional Flight Attendants, the Communications Workers of America, and the Southwest Airlines Pilots’ Association. *Who We Are*, PARTNERSHIP FOR OPEN & FAIR SKIES, <http://www.openandfairskies.com/about-us/> [<https://perma.cc/U4S7-LS9C>].

¹²³ RESTORING OPEN SKIES, *supra* note 115, at 12.

local regulation advantages that benefit the Gulf trio. These include, for instance, the labour rights management.¹²⁴ According to this paper, John O'Connell, Senior Lecturer at Cranfield University, has observed that: "Emirates has the advantage that labour laws in the UAE forbid strikes and there are no trade unions, thus ensuring smooth flight operations and continuous services."¹²⁵

However, it should be noted that Swelbar did not consider the complexity and multidimensionality of global regulatory frameworks. It is true that the three major U.S. carriers are unionized, yet their ability to reconsider the terms of their employees' contracts is more flexible than that of their competitors in Europe (e.g. Air France, Lufthansa). The latter are, in fact, bound by strict regional and national (read: social) regulations. For instance, in October 2015, Air France executives faced rabid reactions from furious striking staff after the airline cut 2,900 jobs.¹²⁶ Subsequently, this number was reduced to 1,000 jobs by 2016.¹²⁷ Though such a reaction would not be conceivable in the U.S. context, Delta Air Lines, perhaps coincidentally, announced at the same time its plan to cut an unspecified number of jobs from its administrative workforce.¹²⁸

Another argument has been raised by Delta Air Lines, which is leading a U.S./EU fight for action against the Middle Eastern carriers' "alleged predatory pricing and capacity dumping practices."¹²⁹ However, Kevin Mitchell, the Founder and President of the Business Travel Coalition, claimed that dumping is "a prac-

¹²⁴ *Id.* at 36.

¹²⁵ John F. O'Connell, *The Rise of the Arabian Gulf Carriers: An Insight into the Business Model of Emirates Airline*, 17 J. OF AIR TRANSP. MGMT. 339, 344 (2011).

¹²⁶ Kim Willsher, *Air France Workers Rip Shirts From Executives After Airline Cuts 2,900 Jobs*, THE GUARDIAN, Oct. 6, 2015, <http://www.theguardian.com/world/2015/oct/05/air-france-workers-storm-meeting-protest-executives-job-losses-paris> [<https://perma.cc/JH56-EJJK>].

¹²⁷ *Air France Supprimera Près d'un Millier d'Emplois en 2016*, LE MONDE, Oct. 18, 2015, http://www.lemonde.fr/economie/article/2015/10/18/air-france-supprimera-un-millier-d-emplois-en-2016_4791841_3234.html# [<https://perma.cc/E86R-WU75>].

¹²⁸ Michael Sasso, *Delta Air Plans Cuts in Office Workforce to Boost Productivity*, BLOOMBERG, Oct. 2, 2015, <http://www.bloomberg.com/news/articles/2015-10-02/delta-air-plans-cuts-in-office-workforce-to-boost-productivity> [<https://perma.cc/686R-838L>].

¹²⁹ Kevin Mitchell, *Why Are The BIG 3 Silent On Consumer Harm From Gulf Carriers?*, LINKEDIN (Apr. 21, 2015), https://www.linkedin.com/pulse/why-big-3-silent-consumer-harm-from-gulf-carriers-kevin-mitchell?trkInfo=VSRPsearchId:426008341442901933796,VSRPtargetId:5996380206972092416,VSRPcmpt:primary&trk=vsrp_influencer_content_res_name [<https://perma.cc/GP3G-N96A>].

tice used and perfected by U.S. major network airlines over decades in their domestic market against low-cost new entrant airlines.”¹³⁰ For instance, on November 10, 2015, the Department of Justice sued “to block a proposed deal between United and Delta airlines to swap access between their New York City-area hubs, in an effort to preserve competition at Newark Liberty International Airport.”¹³¹ On the whole, the aforementioned white paper raises arguments or hypotheses on alleged subsidies, which require a technical and global analysis based on internal data from the alleged Middle Eastern carriers. This process makes the verification of any information somewhat impossible to fulfill from one side.

In that sense, Emirates has clarified that its accounts are audited by PricewaterhouseCoopers (PwC) in compliance with international standards and are publicly available.¹³² Emirates denies receiving State subsidies other than the start-up seed capital in 1985 and claims, rather, that it provides financing to the government of Dubai through dividend payments:

In 1985 Emirates received US\$10 million from the Government of Dubai in start-up seed capital and US\$88 million invested in infrastructure, which included two Boeing 727 aircraft and the Emirates Training College building. This has been more than repaid by dividend payments to the Government of Dubai, which have totalled US\$2.3 billion to date. The Dubai Government and the management of Emirates have consistently made it clear that Emirates is required to be self-sustainable and profitable.¹³³

Unlike Emirates, Etihad and Qatar Airways do not release detailed financial reports, which makes it difficult to establish any finding and, more importantly, to determine the exact size of eventual subsidies.¹³⁴ Yet this cannot be considered in any way as an illegal matter since it is entirely within the right of [non-pub-

¹³⁰ *Id.*

¹³¹ Bart Jansen, *DOJ Seeks to Block United and Delta Deal for Newark Access*, USA TODAY, Nov. 10, 2015, <http://www.usatoday.com/story/travel/flights/2015/11/10/doj-seeks-block-united-and-delta-deal-newark-access/75511350/> [<https://perma.cc/BE59-QH9N>].

¹³² EMIRATES AIRLINES, AIRLINES AND SUBSIDY: OUR POSITION 10 (2012), http://content.emirates.com/downloads/ek/pdfs/int_gov_affairs/airlines_and_subsidy_our_position.pdf [<https://perma.cc/8243-8V3Z>].

¹³³ *Id.* at 8.

¹³⁴ Ted Reed, *Etihad and Qatar Airways Report Earnings, So to Speak—But Are They for Real?*, FORBES, June 20, 2015, <https://www.forbes.com/sites/tedreed/2015/06/20/etihad-and-qatar-airways-report-earnings-so-to-speak-but-are-they-for-real/#50a3d3e376a1> [<https://perma.cc/9W3S-K2XE>].

lically traded] companies to publish or not their financial reports.¹³⁵

On an academic level, a recent paper from the University of Maryland examined direct and secondary impacts of Middle Eastern carriers' competition on U.S. airlines' international traffic and fare levels. The analysis concluded that this competition is associated with (1) direct impacts: significant growth in U.S.–Middle East traffic volumes; and (2) secondary effect: small but statistically significant traffic losses and fare reductions for U.S. carriers in route markets connecting the United States with Africa, Asia, Australia, and Europe.¹³⁶

According to this study, relatively few academic papers have examined the impacts of the Middle Eastern carriers on the air travel market. Nevertheless, Jay Squalli's work is considered as a notable exception in that regard.¹³⁷ Squalli studied the relationship between the performance of Emirates and the air transport liberalization. He analyzed 155 route markets originating in Dubai and concluded that: "further liberalization of the UAE market (and, by extension, other Gulf carriers' markets) leads to greater passenger volumes, lower fares and, ultimately, welfare gains."¹³⁸

So far, the analysis of the aforesaid studies shows that there is a conflict of interest between different stakeholders in the United States. Two main groups have been identified in regard to the ongoing debate on fair competition and the allegedly subsidized Middle Eastern carriers: (1) the three major U.S. airlines and more than six associations representing together the group Partnership for Open & Fair Skies;¹³⁹ and (2) the Business Travel Coalition (BTC), a U.S. advocacy organization, whose ob-

¹³⁵ ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD), *International Transport Forum: Interview with Alain Lumbroso* (Mar. 2016); *Private Company Research*, LIBRARY OF CONGRESS, <http://www.loc.gov/rr/business/company/private.html> [<https://perma.cc/3PS9-76JA>].

¹³⁶ Martin Dresner et al., *The Impact of Gulf Carrier Competition on U.S. Airlines*, 79 TRANSP. RES. PART A: POL'Y AND PRAC. 2–3 (2015), <http://www.businesstravelcoalition.com/documents/theimpactofgulfcarriercompe.pdf> [<https://perma.cc/7LT5-854T>].

¹³⁷ *Id.* at 3.

¹³⁸ *Id.*; see also Jay Squalli, *Airline Passenger Traffic Openness and the Performance of Emirates Airline*, 54 QUARTERLY REV. OF ECON. & FIN. 138 (2014).

¹³⁹ See *Who We Are*, *supra* note 122.

jective is to “bring transparency to industry and government policies and practices.”¹⁴⁰

From a trade and global development perspective, the U.S.-UAE commercial-aviation relationship generated in 2012 more than \$16 billion in benefit to the United States (direct spending and spinoffs), more than 100,000 jobs, and over \$1.6 billion in tax revenue, according to the U.S.-UAE Business Council.¹⁴¹

Based in Washington, D.C., the U.S.-UAE Business Council promotes and advocates trade and commercial opportunities between the two countries. It counts almost 100 members, ranging from public and private corporations, which represent the interests of both countries. In that regard, Emirates, Etihad, Boeing, and Lockheed Martin count among thirty-four founding members. Additionally, FedEx is a corporate member, and the American Business Council of Dubai and the Northern Emirates is an honorary member.¹⁴²

From a manufacturer perspective, Boeing (and Airbus as well) is benefiting hugely from the continuing growth of the Middle Eastern carriers at spectacular rates (i.e. expansion of the fleets). For instance, Emirates is currently the world’s largest operator of the 777 and the only airline that operates all the variants of this aircraft. During the Dubai Air Show, in 2013, Emirates announced an order for one-hundred fifty 777Xs, which is considered a record for the single largest airplane order ever in the world.¹⁴³

From a consumer perspective, the Middle Eastern carriers stimulate demand, offer passengers more choice, and pressure the U.S. airlines to improve their product and service offerings. As a matter of fact, the Middle Eastern carriers have adopted a competitive strategy based on an aggressive head-to-head competition with their rivals worldwide. In response to the alleged subsidies, Emirates clarified that it “filled a gap in the market by taking travelers to new destinations not served by [others], and

¹⁴⁰ *About*, BUS. TRAVEL COAL., <http://www.businesstravelcoalition.com/about/untitled.html> [https://perma.cc/R2TH-M6LP].

¹⁴¹ ROB BRITTON, U.S.-U.A.E. COMMERCIAL AVIATION: TAKING FLIGHT – THE WORLD’S FASTEST GROWING BILATERAL AVIATION RELATIONSHIP 1 (2013), http://usuaebusiness.org/wp-content/uploads/2013/03/US-UAE-aviation-report_Published.pdf [https://perma.cc/5RXX-GKUW].

¹⁴² *Membership*, U.S.-U.A.E. BUS. COUNCIL, <http://usuaebusiness.org/membership/> [https://perma.cc/M4ZG-WHXY].

¹⁴³ *Emirates’ \$76 Billion Boeing Aircraft Order a Boost to US Aviation Industry*, EMIRATES (Nov. 18, 2013) <http://www.emirates.com/us/english/about/news/order-boeing.aspx?intcid=carousel-637518-1443005> [https://perma.cc/Z43Y-ZDC2].

helped contribute to [U.S.] economies, trade, and tourism.”¹⁴⁴ Also, Emirates emphasized that it “provides a much-needed competitive alternative to the three airline alliances with anti-trust immunity permitting them to keep fares artificially high.”¹⁴⁵

The latter point ties in with a similar conclusion of Timothy John Hazledine, Professor at University of Auckland, who studied the impacts of Emirates’ service in Trans-Tasman air markets. Indeed, Hazledine concluded that “Emirates offered significantly lower fares but did not exert much pricing pressure on incumbent carriers Air New Zealand and Qantas.”¹⁴⁶

That being said, in 2016, Qatar Airways, Emirates, and Etihad were respectively ranked second, first, and sixth out of the 100 best airlines by Skytrax.¹⁴⁷ The rankings are based on the votes from millions of travelers from around the world. Skytrax World Airline Awards are “coveted Quality accolades for the world airline industry.”¹⁴⁸

E. CANADA/UAE RESTRICTIVE BILATERAL ASA

David Gillen, Director of the Centre for Transportation Studies at the University of British Columbia, underlined different metrics to be considered for assessment of the Canadian Blue Sky policy. These include the number and type of treaties, who the treaties are with, and the impact on passengers, cargo, and the economy. With this regard, Gillen highlighted in his analysis important facts vis-à-vis:

- The institutional framework and process: the number of negotiating teams which has not been adjusted (increased) since the adoption of the Blue Sky policy.
- The number of signed ASAs: prior to the Blue Sky policy, between 1949 and 2004, fifty ASAs were signed (over a period of fifty-six years). From 2005 to 2009, fifteen ASAs were signed a

¹⁴⁴ *American Consumers and Regional State Economies the Ultimate Victims of US Carriers’ Protectionist Campaign*, Cautions Emirates Airline’s President, EMIRATES (Mar. 17, 2015), <https://www.emirates.com/media-centre/american-consumers-and-regional-state-economies-the-ultimate-victims-of-us-carriers-protectionist-campaign-cautions-emirates-airlines-president> [https://perma.cc/HBE6-NDU8].

¹⁴⁵ *Id.*

¹⁴⁶ Dresner et al., *supra* note 136, at 3; see also Tim Hazledine, *Pricing, Competition and Policy in Australasian Air Travel Markets*, 44 J. TRANSP. ECON. & POL’Y 1, 37 (2010).

¹⁴⁷ *The World’s Top 100 Airlines in 2016*, SKYTRAX, http://www.worldairlineawards.com/awards/world_airline_rating.html [https://perma.cc/CW3T-M5EZ].

¹⁴⁸ *Id.*

rate three times that prior to 2005 which may be considered as a huge success; these include the Open Skies Agreements with the European Union (EU) and the United States.¹⁴⁹

Gillen pointed out other metrics as necessary to assess the impact of the Blue Sky policy in terms of its initiation and facilitation of the negotiation process. However, the lack of available data would not allow him to proceed in that purpose, which is due, according to him, to the secrecy characterizing this process within the institutional framework.¹⁵⁰

Gillen estimated a mathematical model of total international passengers against numbers of ASAs. Besides the negative effect of the distance on the total number of passengers with an elasticity of -0.67, the impact of the degree of liberalization on total number of passengers was the main result of the study. In fact, countries with an Open Sky agreement with Canada have significantly more passenger flows, followed by liberal ASAs, which also have higher passenger flows. Ultimately, it was noted that: (1) the impact of Open Skies agreements is nearly four times larger than a less liberal ASA; and (2) “the Blue Sky policy introduced in 2005 has had no statistically significant impact on total passenger flows between Canada and its top 50 international passenger destinations.”¹⁵¹

Under the UAE-Canada ASA, designated airlines from both parties—Etihad, Emirates, and Air Canada—are permitted to operate three weekly flights between Toronto and Dubai.¹⁵² Emirates began flying the Dubai-Toronto route in October 2007. These flights have been consistently operated at capacity—even after the A380 was put on the route in 2009.¹⁵³ Since then, the UAE has been “pushing” for a more liberalized ASA. Nevertheless, the negotiations between the two countries, which lasted several years, resulted in little to no progress.¹⁵⁴ In No-

¹⁴⁹ Forsyth et al., *supra* note 64, at 447–48.

¹⁵⁰ *Id.* at 448.

¹⁵¹ *Id.* at 454.

¹⁵² Alexander Cornwell, *Air Canada: We Will Oppose More Flights for Emirates, Etihad*, GULF NEWS (Nov. 5, 2015), <http://gulfnews.com/business/aviation/air-canada-we-will-oppose-more-flights-for-emirates-etihad-1.1614329> [https://perma.cc/PVY7-QSD2].

¹⁵³ EMIRATES, EMIRATES & CANADA 1 (2016), https://cdn.ek.aero/downloads/ek/pdfs/int_gov_affairs/Emirates_and_Canada_June_2016.pdf [https://perma.cc/33HU-G9D3].

¹⁵⁴ The Canadian Press, *Emirates Pushing Canada on Air Travel*, CBC NEWS, Oct. 10, 2010, <http://www.cbc.ca/news/politics/emirates-pushing-canada-on-air-travel-1.925223> [https://perma.cc/63NZ-HUU7].

vember 2010, it was reported that Canada was prepared to offer more landing slots at the Calgary and Vancouver airports despite Air Canada's objection to any increased service for UAE carriers. Air Canada argued that such an expansion of landing rights would harm Air Canada because few passengers fly from the UAE to Canada and that UAE carriers are carrying passengers beyond their hubs (sixth freedom),¹⁵⁵ which will harm Air Canada.

The UAE was not satisfied with anything less than more flights to Toronto.¹⁵⁶ In fact, it was reported that Canada's offers included a capacity cut instead of a capacity increase, meaning that the offers were of little value to the UAE, and so the UAE negotiators were accordingly offended.¹⁵⁷ The dispute over commercial airline landing rights soured relations between the two countries and led to the Canadian Forces getting evicted from a key military transit base near Dubai.¹⁵⁸ Moreover, the UAE decided to pursue visa reciprocity towards Canada, among other countries, by the end of 2010.¹⁵⁹

Surprisingly, in 2012, some reports indicated that Air Canada had proposed a joint venture with Emirates in 2006 "in which the two airlines would share equally in profits from increased flights between the [UAE and Canada]."¹⁶⁰ Yet Yves Dufresne, Vice President of Alliances and Regulatory Affairs at Air Canada, minimized the relevance of this information.¹⁶¹ According to Dufresne, this was somehow propaganda circulated as a result of Transport Canada's refusal to increase landing rights for Emirates and Etihad in 2012.

In 2014, Emirates submitted a paper to the Canada Transportation Act Review 2014, in which it considered the UAE-Canada

¹⁵⁵ *U.A.E. Wanted Only Toronto Air Access: Sources*, CBC NEWS, Nov. 8, 2010, <http://www.cbc.ca/news/politics/u-a-e-wanted-only-toronto-air-access-sources-1.939367> [<https://perma.cc/DS95-VTWP>].

¹⁵⁶ *Id.*

¹⁵⁷ Bruce Cheadle, *UAE Envoy Explains Tit-For-Tat Visa Demand*, THE GLOBE AND MAIL (Nov. 9, 2010), <http://www.theglobeandmail.com/news/politics/uae-envoy-explains-tit-for-tat-visa-demand/article1791860/> [<https://perma.cc/T3JY-AZL7>].

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*

¹⁶⁰ *Air Canada Proposed Emirates Deal in 2006: Documents*, THE GLOBE AND MAIL (Aug. 24 2012), <http://www.theglobeandmail.com/news/politics/air-canada-proposed-emirates-deal-in-2006-documents/article561788/> [<https://perma.cc/T7ZL-KQQ7>].

¹⁶¹ Yves Dufresne, *Guest Lecturer in CIAM520 – Air Transport Finance & Economics*, MCGILL UNIVERSITY/SCHOOL OF CONTINUING STUDIES (Mar. 11, 2015).

ASA as one of the most restrictive agreements. As shown in Table 1, Emirates explained that Canada is the only country that allows just three weekly flights, among eighty countries to which Emirates operates passenger services.¹⁶²

Table 1: Canada's stance on airline competition from an Emirates perspective compared with other G7 members

G7 Member	Emirates entitlement	Frequencies/week
UK	Open Sky	112
US	Open Sky	77
Germany	Unrestricted to any 4 point	63
Italy	49	49
France	32	32
Japan	35	21
Canada	3	3

Source: Emirates Airlines (2014)

The paper emphasized that Emirates is a fully commercial airline operating a transparent and non-subsidized business model, and as mentioned earlier, its accounts are audited by PwC in compliance with international standards, and are publicly available.¹⁶³

In his address to the Standing Committee on International Trade at the House of Commons of Canada, Ian Smith, President of the Air Canada Pilots Association (ACPA), declared in 2015:

I mention this to address two fronts that are concerning our association at this time. One is the continued attempt by Emirates Airline to expand its foothold into Canada When applying the blue sky policy, it is essential to understand that Emirates Airline operates under a completely different business model and completely different rules. Unlike Air Canada, Emirates Airline is an extension of Dubai's government, whose economic development strategy is to expand its airline market share at other countries' expense. Emirates Airline is a subsidiary of the Emirates

¹⁶² EMIRATES, EMIRATES SUBMISSION TO THE CANADA TRANSPORTATION ACT REVIEW, 3–4 (2014), INTERNATIONAL GOVERNMENT AND ENVIRONMENT AFFAIRS, <https://www.tc.gc.ca/eng/ctareview2014/pdf/Emirates%20Submission.pdf> [<https://perma.cc/R9Z3-GHCL>].

¹⁶³ *Id.* at 1.

Group of companies, which integrates the airline into its airport operations in Dubai. With near limitless state capital funding, a tax-free environment, foreign low-cost labour to build infrastructure, and a state-owned airline, Dubai has been transformed into a major collection point, commonly called a hub.¹⁶⁴

Smith believed that Emirates' move will damage the sustainability of the Canadian aviation sector and, consequently, harm national interests. He noted that the domestic aviation market is presently at its upper saturation limit—with a population of almost 36 million.¹⁶⁵

Overall, these statements appear to be akin to the allegations of the major U.S. carriers against the Middle Eastern carriers at large.¹⁶⁶ However, unlike the situation in the United States, it is important to note that some stakeholders are not involved in the current debate in Canada. This includes the tourism industry and most importantly the end users—passengers.

In 2013, the Tourism Association Industry of Canada (TAIC) published a paper addressing its position on Open Skies policy in Canada. This paper analyzed the potential impacts and interactions of the Canadian air policy with the tourism industry.¹⁶⁷ It outlined three interrelated perspectives that should be considered in any improvements in air access to Canada: (1) “Cost Structure: [e]ven with a liberal air access agreement, Canada’s prohibitively expensive aviation cost structure will continue to dissuade foreign carriers from doing business with Canada”; (2) “Facilitation: Canada must be able to meet the anticipated increased demand” from a more liberalized ASA by rectifying outstanding immigration issues such as Transit Without Visas, Canada Border Services Agency staffing capacity; and (3) ASAs: “Open Skies policies alone will not increase international visitation. However, with the right aviation policies in place ([points] 1 and 2) Canadian tourism may benefit from more liberalized ASAs in specific cases.”¹⁶⁸

¹⁶⁴ Air Canada Pilots Association, House of Commons, Standing Comm. on Int’l Trade, 41st Can. Parl., 2d Sess, No 44 (Feb. 4, 2015) (statement of Ian Smith), <http://www.parl.gc.ca/HousePublications/Publication.aspx?DocId=7827215&Language=E&Mode=1> [<https://perma.cc/LUW6-DL9C>].

¹⁶⁵ *Id.*

¹⁶⁶ Compare *id.* with RESTORING OPEN SKIES, *supra* note 115.

¹⁶⁷ ADRIENNE FOSTER, TOURISM ASSOCIATION INDUS. OF CAN., GATEWAY TO GROWTH-AIMING HIGH: AIR ACCESS TO CANADA 13 (2013), http://tiac.travel/_Library/TIAC_Publications/2013_Aviation_Paper_WEB.pdf [<https://perma.cc/EAD8-NYA8>].

¹⁶⁸ *Id.*

With regard to the passengers, it seems that the policymakers and airlines do not bother to mention how high air fares are in both the domestic and international markets. Admittedly, Canadian airports have been run by not-for-profit entities since they were corporatized in the 1990s, yet the end users—passengers—have to bear the cost of the investments on airport facilities by paying high fees to ensure a return-on-investment of the airport facilities (“user pay PLUS” system, as explained earlier in this article).¹⁶⁹ Ticket taxes and airport charges are pointed out as real issues facing air transport development in Canada.¹⁷⁰ In 2012, 23% of the total Origin/Destination (O/D) transborder passengers used neighboring U.S. airports. This represents a leakage of traffic of 6.4 million passengers, 5 million of which are Canadian residents.¹⁷¹ Mary-Jane Bennett concluded, in her study, that leakage of passenger traffic in Canada is due mainly to the lack of competition as a result of the exorbitant costs (base fare and charges) leading to increasingly high fares in the aviation market in Canada.¹⁷²

On the other hand, a recent article by Centre Asia Pacific Aviation (CAPA) examined the recent withdrawal of Delta Air Lines from its Dubai route (announced on October 28, 2015) due to competition with Emirates.¹⁷³ The article noted the coincidence of this move with the new service launched by Air Canada to Dubai (on November 3, 2015) and Delhi (on November 1, 2015). The article considered Canada as overtly protectionist and concluded that from a passenger perspective, “open skies in the [U.S.] has delivered extensive benefits while protectionism in Canada is limiting travel options and the economy.”¹⁷⁴

¹⁶⁹ Gooch, *supra* note 68.

¹⁷⁰ INTERVISTAS CONSULTING, THE ROLE OF GOVERNMENT POLICY IN THE COST COMPETITIVENESS OF CANADIAN AVIATION: IMPACTS ON AIRPORTS AND AIRLINES 3, 56 (2008), http://www.intervistas.com/downloads/Aviation_Competitiveness_Report_16Jan2008.pdf [<https://perma.cc/D93T-56ZS>].

¹⁷¹ CANADIAN AIRPORTS COUNCIL, THE ECONOMIC IMPACT OF THE AIR TRANSPORTATION INDUSTRY IN CANADA 10 (2013), http://www.cacairports.ca/sites/default/files/Docs_2013/CAC_Economic-Impact-Study_FINAL_April-2013.pdf [<https://perma.cc/VK29-62MG>].

¹⁷² Mary-Jane Bennett, *A New Policy is Required for Air Transportation*, 104 BACKGROUND (FRONTIER CTR. FOR PUB. POLICY) 1, 4 (2013), https://www.fcpc.org/files/1/FB104_AirTransport_JA06F5.pdf [<https://perma.cc/HX5C-7WXA>].

¹⁷³ *Delta Air Lines Exits Dubai as Air Canada Arrives. The Impact of Open Skies vs Protectionism*, CAPA – CENTRE FOR AVIATION (Nov. 2, 2015), <http://centreforaviation.com/analysis/delta-air-lines-exits-dubai-as-air-canada-arrives-the-impact-of-open-skies-vs-protectionism-250724> [<https://perma.cc/JK8G-HDVH>].

¹⁷⁴ *Id.*

III. APPLICATION OF CASE STUDIES TO PRINCIPLES OF COMPETITION IN AIR TRANSPORT

The definition of a level playing field in the international trade is often a source of confusion. In fact, a conflict of interest is most likely to occur when various stakeholders are involved in complex processes within different environments, and hence, different conditions of operation (e.g. labor standards, taxes). An equilibrium is not easy to achieve when potential benefits for a party are more of threats for others. In that regard, Appelman et al. explained:

Pleas for a level playing field, for instance in international trade, are often not well-founded. This is because it is not exactly clear what a “level playing field” means. But even if it would be clear what the plea would imply, a level playing field is not always desirable from an economic perspective.¹⁷⁵

Appelman et al. defined the concept of “level playing field” according to two approaches: First, “a rules-based level playing field, which suggests that all players in a market are treated the same in equal circumstances” regarding various criteria such as labour standards, taxes, and subsidies.¹⁷⁶ In other words, all firms compete under symmetric rules in an international market.¹⁷⁷ Second, “an outcome-based level playing field, which means that all firms in a market have the same expected profit,” therefore, disadvantaged firms are compensated by the government.¹⁷⁸ In that case, asymmetric rules are adopted to level the playing field; that is, corrective measures are designed to address the distortions caused by unfair advantages.¹⁷⁹ Appelman et al. pointed out two fundamental points with regard to the applicability of both approaches: (1) “a rules-based level playing field is desirable, although there are reasons to deviate from this assumption”; and (2) “it is never desirable to pursue a fully outcome-based level playing field, but that it may be desirable to

¹⁷⁵ MARJA APPELMAN ET AL., CPB NETHERLANDS BUREAU FOR ECONOMIC POLICY ANALYSIS, EQUAL RULES OR EQUAL OPPORTUNITIES? DEMYSTIFYING LEVEL PLAYING FIELD 89 (2003), <http://www.cpb.nl/sites/default/files/publicaties/download/equal-rules-or-equal-opportunities-demystifying-level-playing-field.pdf> [https://perma.cc/FN3X-UEBS].

¹⁷⁶ *Id.*

¹⁷⁷ *Id.* at 18.

¹⁷⁸ *Id.* at 89.

¹⁷⁹ *Id.* at 22.

level the playing field to a certain extent in the case of market failure.”¹⁸⁰

Based on the above, the definition of the level playing field and the applicability of the concept rely on the appreciation of the mechanisms governing international markets. That is to say, interpretations from different perspectives hence different interests depending on the specifics and complexity of each industry.

In that sense, the definition will be even more complex for the aviation system, which is based by definition on the international market mechanisms from regulatory, legal, and operational perspectives. For instance, as mentioned earlier, ICAO developed, conjointly with WTO, the Essential Service and Tourism Development Route Scheme (ESTDR), which was “a mechanism whereby a support, in the form of a financial subsidy and/or an exclusive concession, can be provided to airlines for the provision of certain services of a public service nature.”¹⁸¹ The experience of route support schemes has raised many questions regarding the appropriate manner by which the process of subsidy allocation should be set so that any distortion of market and unfair competition are avoided, i.e., the playing field has to be leveled.¹⁸²

Jaap G. de Wit, Professor of Transport Economics at University of Amsterdam, clarified that even with equal rules for international trade and identical economic and institutional policies (i.e. rules-based level playing field), trading partners may still benefit from comparative advantages. As a result, the playing field is unlevel, yet De Wit noted that this “cannot be qualified as unfair competition.”¹⁸³

¹⁸⁰ *Id.* at 89.

¹⁸¹ *A Study of an Essential Service and Tourism Development Route Scheme*, *supra* note 30, at 1.

¹⁸² Jon Woolf, Dir. & Principal Consultant at ASM, Address to the ICAO Glob. Symposium on Air Transp. Liberalization: Air Service Development for Developing Countries 23 (Sept. 18–19, 2006), <http://www.icao.int/Meetings/LiberalizationSymposium/Documents/2006-Symposium-Dubai/Woolf.pdf> [https://perma.cc/CF89-BVNX].

¹⁸³ Jaap G. de Wit, *Unlevel Playing Field? Ah Yes, You Mean Protectionism*, 41 J. OF AIR TRANSP. MGMT. 22, 24 (2014); *see also* Ian Fletcher, *Time to Quit Pining for a “Level Playing Field” in International Trade*, GLOB. GEOPOLITICS & POLITICAL ECON. (Mar. 18, 2011), <http://globalgeopolitics.net/wordpress/2011/03/18/time-to-quit-pining-for-a-level-playing-field-in-international-trade/> [https://perma.cc/6TVS-H8BR]; Samuel Bostaph, *The Myth of the Level Playing Field*, LEWROCKWELL.COM (May 12, 2005), <https://www.lewrockwell.com/2005/05/samuel-bostaph/the-myth-of-the-level-playing-field/> [https://perma.cc/V9YQ-QVVU].

The theory of comparative advantage suggests that free trade stimulates economic growth within a country. That is based on the trading of goods that can be produced most efficiently in such a way as to offset the disadvantages in areas where goods are produced less efficiently compared to other countries. As a whole, trade is a positive-sum game, according to the theory of comparative advantage.¹⁸⁴

Theoretically, comparative advantages and disadvantages are supposed to be assessed by the negotiating parties on an individual basis throughout the negotiation process. The outcome of such assessment permits each party to compare the consistency of its own endogenous and exogenous parameters (e.g. economic measures; institutional policies vs. geographic location) to that of the other parties. This process allows, at the same time, parties to determine the Best Alternatives to a Negotiated Agreement (BATNA), which is the most valuable alternative course of action to be considered if negotiations fail and an agreement cannot be reached.¹⁸⁵

As for aviation, the comparative advantage/disadvantage approach is more difficult to achieve given “that aviation has been separated from general trade negotiations.”¹⁸⁶ As a result, “the issue of the level playing field plays an inordinately larger role in aviation than in other sectors.”¹⁸⁷ Nevertheless, many aspects in aviation remain consistent with this perspective. For instance, as explained earlier in this article, Dubai considers the Open Skies policy “a key component of its economic and trade policy.”¹⁸⁸ Overall, the national institutional policies play in favor of the aviation system as a whole in the UAE and Qatar.¹⁸⁹ In addition, the geographic location is pointed out as a major advantage for the Middle Eastern carriers; that is, international hubs enable carriers to benefit from operations between the United States and Asia Pacific, as well as Europe and South Asia/East Africa.¹⁹⁰ On the other hand, Boeing and Airbus benefit in return from

¹⁸⁴ de Wit, *supra* note 183, at 24.

¹⁸⁵ ROGER FISHER ET AL., GETTING TO YES: NEGOTIATING AGREEMENT WITHOUT GIVING IN 51–52 (1992).

¹⁸⁶ MIKE TRETHEWAY & ROBERT ANDRIULAITIS, INTERVISTAS CONSULTING, WHAT DO WE MEAN BY A LEVEL PLAYING FIELD IN INTERNATIONAL AVIATION? 5 (2015), <http://www.itf-oecd.org/sites/default/files/docs/dp201506.pdf> [<https://perma.cc/N8QG-VZ28>].

¹⁸⁷ *Id.*

¹⁸⁸ 78 Years with . . . an Open Skies Policy, *supra* note 102, at 6.

¹⁸⁹ *Id.*

¹⁹⁰ TRETHEWAY & ANDRIULAITIS, *supra* note 186, at 5.

the rapid growth of the Middle Eastern carriers as discussed earlier in this article; this is due to the comparative advantage of the United States and Europe in high tech manufacturing and skilled labor for the production of the largest aircraft tailored to the Gulf trio, i.e. the A380 and B777.¹⁹¹ Besides, the U.S. approach in air transport liberalization has been advocating for competition rules by reducing the burden of regulation that is to ensure equality of opportunity for the different players.¹⁹² In fact, the United States was the first country to start pursuing Open Skies agreements following the “International Air Transportation Negotiations Statement of U.S. Policy for the Conduct of the Negotiations,” which was issued by President Carter in 1978.¹⁹³ According to this statement:

The guiding principle of U.S. aviation negotiation policy will be to trade competitive opportunities, rather than restrictions, with our negotiating partners. We will aggressively pursue our interests in expanded air transportation and reduced prices rather than accept the self-defeating accommodation of protectionism. Our concessions in negotiations will be given in return for progress toward competitive objectives, and these concessions themselves will be of a liberalizing character.¹⁹⁴

One of the fundamental rules of air transport regulation is to make sure that international air transport services are established “on the basis of equality of opportunity and operated soundly and economically.”¹⁹⁵ Hence as discussed earlier, the objective of ICAO is to “[i]nsure that the rights of contracting States are fully respected and that every contracting State has a fair opportunity to operate international airlines.”¹⁹⁶

On another note, Annex 1B of the GATS does not cover the “largest part of air transport services: traffic rights and services directly related to traffic.”¹⁹⁷ However, it is worthy to note that “traffic rights” include, by definition, “tariffs to be charged and

¹⁹¹ *Id.*

¹⁹² *Id.*

¹⁹³ Adam L. Schless, *Open Skies: Loosening the Protectionist Grip on International Civil Aviation*, 8 EMORY INT’L L. REV. 435, 435, 441–42 (1994).

¹⁹⁴ Jimmy Carter, *International Air Transportation Negotiations Statement of U.S. Policy for the Conduct of the Negotiations*, AM. PRESIDENCY PROJECT (Aug. 21, 1978), <http://www.presidency.ucsb.edu/ws/?pid=31218> [https://perma.cc/LSP3-ML7M].

¹⁹⁵ Chicago Convention, *supra* note 1, at 1.

¹⁹⁶ *Id.* at 20.

¹⁹⁷ *Air Transport Services*, *supra* note 25.

their conditions.”¹⁹⁸ Likewise, commercial disputes related to the subject of paragraph 3 of the Annex are not covered by the GATS (i.e., aircraft repair and maintenance services, the selling and marketing of air transport services, and Computer Reservation System (CRS) services).¹⁹⁹

Therefore, the GATS’ procedures of dispute settlement can be applied to air transport services other than the above issues such as unfair competition caused by “unlawful” subsidies. Even though these procedures can only be invoked when certain conditions are met and as a last resort to be relied upon only after other alternatives (i.e. clauses of bilateral ASAs). In fact, paragraph 4 of the GATS’ Annex on air transport services, specifies that “[t]he dispute settlement procedures of the Agreement may be invoked only where obligations or specific commitments have been assumed by the concerned Members and where dispute settlement procedures in bilateral and other multilateral agreements or arrangements have been exhausted.”²⁰⁰

From a regulatory perspective, it should be noted that there is almost no comprehensive descriptive clause referring to anti-competition or unlawful subsidies in the existing bilateral ASAs. For instance, the Open Sky agreement between the United States and the UAE has a very vague referral to competition issues. Article 11 of this agreement states that “[e]ach Party shall allow a fair and equal opportunity for the designated airlines of both Parties to compete in providing the international air transportation governed by this Agreement.”²⁰¹

Moreover, it is specified on the first page of the agreement that, among other things, both countries “[d]esire to promote an international aviation system based on competition among airlines in the marketplace with minimum government interference and regulation.”²⁰² The word “minimum” is vague and subjective, which opens the door to different interpretations of how a “minimum government interference and regulation” should or shall be defined.²⁰³

¹⁹⁸ Marrakesh Agreement, Annex 1B, *supra* note 26, at 307.

¹⁹⁹ *Id.*

²⁰⁰ *Id.*

²⁰¹ Air Transport Agreement between the Government of the United States of America and the Government of the United Arab Emirates U.A.E.-U.S., 8, Mar. 11, 2002, T.I.A.S. No. 02-1211, <http://www.state.gov/documents/organization/125743.pdf> [<https://perma.cc/R9Q6-DQNZ>] [hereinafter US-UAE Agreement].

²⁰² *Id.* at 1.

²⁰³ *Id.*

On the other hand, settlement of disputes is discussed under Article 14 of this agreement, which includes disputes on competition issues.²⁰⁴ Likewise, Article 14 explains the process of formal consultations and arbitration by a tribunal of three arbitrators.²⁰⁵ A comparison of Article 14 of the U.S.-UAE agreement with Article 34 of the ICAO TASA²⁰⁶ mainly shows the following:

- Article 14 of the US-UAE Open sky agreement is somehow based on the second arbitration approach defined by ICAO.
- The wording of paragraph 7 of Article 14 complies with the first option of the paragraph 8 of Article 34, which limits the enforcement of the decision or award of the arbitral tribunal: “[e]ach Party shall, to the degree consistent with its national law, give full effect to any decision or award of the arbitral tribunal.”
- The use of commas instead of square brackets in the ICAO proposal may modify the meaning or the scope of the foregoing paragraph.²⁰⁷

It should be noted that under the provision of the second option of paragraph 8 in Article 34, “the decision of the tribunal shall be binding on the Parties.”²⁰⁸

Consequently, the U.S.-UAE Open Sky agreement does not provide explicit information or examples that answer the following questions: How should an accepted level of government interference and regulation be defined? How should the playing field be leveled so that any distortions of market and unfair competition are avoided? And, more importantly, how shall the contracting parties proceed when commercial disputes occur?

As for the United States’ allegations of capacity dumping, tariffs to be charged and their conditions, or any other matter re-

²⁰⁴ *Id.* at 10.

²⁰⁵ *Id.*

²⁰⁶ ICAO TEMPLATE AIR SERVICES AGREEMENT, *supra* note 10, at 75–83. Article 34 on settlement of disputes provides an explicit description of the dispute resolution process, which depends on whether the ASA is traditional or fully liberalized. *Id.* Article 34 may exclude disputes on competition issues if the contracting parties decide to include a separate consultation process under Article 15 on fair competition. *See id.* at 75.

²⁰⁷ Compare ICAO TEMPLATE AIR SERVICES AGREEMENT, *supra* note 10, at 80–82, with US-UAE Agreement, *supra* note 201, at 10. “Parenthetic expressions may be set off by parentheses or dashes instead of commas, depending on the degree of emphasis or pause desired, or the length of the expression.” *Punctuation*, BUREAU DE LA TRADUCTION (2017), <http://www.btb.termiumplus.gc.ca/tcdnstyl-chap?lang=eng&lettr=chapsect7&info0=7> [<https://perma.cc/H54F-E53C>].

²⁰⁸ ICAO TEMPLATE AIR SERVICES AGREEMENT, *supra* note 10, at 80.

lated to traffic rights, the plaintiff should invoke Article 14 (Settlement of Disputes) and Article 12 (Pricing) in the current US-UAE Open Sky agreement.²⁰⁹ Given that commercial disputes cannot be resolved based on the vague provisions of Article 14, parties cannot take any legal actions, per allegations of financial subsidies, under the current bilateral ASA. Thus, unless airlines involved in that issue foresee their future growth through partnerships when possible instead of exchanging useless allegations, the only recourse should be a specialized jurisdiction based on views of experts in the subject matter of the dispute. In that sense, the WTO is the international body empowered to examine questions that bear on commercial disputes (as explained previously in the GATS' Annex on Air Transport Services).

Consequently, based on foregoing analysis, and given the ASAs' limited scope, plaintiffs should request the intervention of the WTO in cases of commercial disputes related more specifically to alleged financial subsidies, which may distort the market. Even though there is no mention to the WTO in the overall existing bilateral ASAs in case of a dispute relating to unfair competition, perhaps it is the will of civil aviation regulators to maintain the status quo by resolving possible disputes under the bilateral ASAs without any referral to an organization outside the aviation sphere or diplomatic channels of both parties—in the worst scenario.

IV. CONNECTIVITY AND DISRUPTIVE INNOVATION IN AIR TRANSPORT

Air transport connectivity is defined in line with the Chicago Convention as inter alia Preamble and paragraph D of Article 44: “[m]eet[ing] the needs of the peoples of the world for . . . efficient and economical air transport.”²¹⁰ Accordingly, connectivity in air transport is defined by ICAO as the “[m]ovement of passengers, mail and cargo involving the minimum of transit points, which: makes the trip as short as possible, with optimal user satisfaction; [and] at the minimum price possible.”²¹¹

In 2015, a commentator said:

²⁰⁹ See US-UAE Agreement, *supra* note 201, at 9–10.

²¹⁰ Chicago Convention, *supra* note 1, at 20.

²¹¹ A. Sainarayan, Chief, Aviation Data & Analysis Sec., ATB, Workshop at the ICAO's 39th Assembly: Air Connectivity and Competition (Sept. 27, 2016), <http://www.icao.int/Meetings/a39/workshops/Documents/Air%20Connectivity%20and%20Competition.pdf> [<https://perma.cc/2L9F-4JPG>].

“Connectivity” which is the most compelling need in aviation, and embodied in the Chicago Convention as *inter alia* “meeting the needs of the people of the world for efficient and economical air transport” is stultified by interests of commercial and national policy The [U.S. position]²¹² makes one wonder whether the fate of air transport lies in internal job creation and not in connecting the world which is the main intent and purpose of the Chicago Convention.²¹³

In 2012, the numbers of cities served from twenty-four major hub airports across the globe were ranked according to three different measures with different outcomes. In terms of domestic and international flights (i.e., total cities served and total international destinations), Frankfurt—FRA with 313 cities served, is the largest, followed by Paris—CDG with 268. For the United States, Atlanta—ATL ranked third (228) and Chicago O’Hare—ORD ranked fifth (210). In Canada, Toronto—YYZ ranked eighth (183) in a tie with New York—JFK (183) and London—LHR. Finally, Dubai—DXB ranked fifth with 313 cities served.²¹⁴

In the context of international flights only, the geographical location of the hub airports must be considered when “examining how airport rate as international hubs on connectivity.”²¹⁵ In that regard, European hubs rate well since they have “a majority of their service within Europe that is included as international.”²¹⁶ For similar reasons, Dubai Airport also scores well in terms of the number of international destinations served, coming in third behind Paris—CDG and Frankfurt—FRA.²¹⁷

As for outside the region, an alternative measure considers the “number[] of cities served outside the hub airport’s local region.”²¹⁸ “Dubai[—DXB] is the largest international hub airport on this measure, followed by Frankfurt—FRA, Paris—CDG and New York—JFK.”²¹⁹ Toronto—YYZ and Montréal—YUL also fare well on this measure; Toronto ranked sixth just behind New

²¹² The author refers to the recent allegations of the three major U.S. airlines against the Gulf carriers.

²¹³ Ruwantissa Abeyratne, *What in the World is Happening to Air Transport?*, SRI LANKA GUARDIAN, May 5, 2015, <http://www.slguardian.org/2015/05/what-in-the-world-is-happening-to-air-transport/> [https://perma.cc/Z9PV-7VYQ].

²¹⁴ THE ECONOMIC IMPACT OF THE AIR TRANSPORTATION INDUSTRY IN CANADA, *supra* note 171, at 16–17.

²¹⁵ *Id.* at 16.

²¹⁶ *Id.*

²¹⁷ *Id.* at 17.

²¹⁸ *Id.* at 16.

²¹⁹ *Id.* at 16–17.

York—JFK and London—LHR, and Montréal ranked tenth.”²²⁰ “The Asian hub airports don’t rate highly on this measure as much of their service is to airports within the region.”²²¹ “Canadian hub airports are relatively small compared to major world hub airports considering total passenger traffic, but in terms of connectivity they fare better.”²²²

According to Clayton M. Christensen, professor at Harvard Business School and pioneer of the disruptive innovation theory, “disruptive innovation . . . [is] a process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up market, eventually displacing established competitors.”²²³ As a result of that process, disrupted products or services become more accessible and affordable to a large population instead of a specific segment willing to pay higher prices.²²⁴

In a recent article of Harvard Business Review, Christensen et al. explained the concept and basic tenets of disruptive innovation theory. The process of disruption describes how a disrupter enters a market or creates a new one and how it evolves from a business oriented toward new customers or low-end to high-end customers, while passing through the mainstream customers.²²⁵

Christensen et al. pointed out the confusion surrounding the application of the concept of disruptive innovation when it is used by many researchers, writers, and consultants. In that regard, “disruptive innovation” is different from “sustaining innovations,” which focuses on improving the products or services offered to an incumbent’s existing customers—notably, the most profitable ones.²²⁶ By contrast:

Disruptive innovations . . . are initially considered inferior by most of an incumbent’s customers. Typically, customers are not willing to switch to the new offering merely because it is less expensive. Instead, they wait until its quality rises enough to satisfy

²²⁰ *Id.*

²²¹ *Id.* at 16.

²²² *Id.*

²²³ *What is Disruptive Health Technology?*, CARNEGIE MELLON UNIV., DISRUPTIVE HEALTH TECHNOLOGY INSTITUTE, <http://www.dhti.cmu.edu/dhti/definition.asp> [<https://perma.cc/LLT4-FN4N>].

²²⁴ *Id.*

²²⁵ Clayton M. Christensen et al., “*What is Disruptive Innovation?*”, 93 HARV. BUS. REV. 44, 46 (2015).

²²⁶ *Id.* at 46–47.

them. Once that's happened, they adopt the new product and happily accept its lower price.²²⁷

Christensen et al. explained that “[d]isruptive innovations originate in low-end or new-market footholds.”²²⁸ New-market disruption occurs where a new market is created where none previously existed, hence a new segment of customers is targeted by a disrupter. Second, low-end disruption refers to the situation where low-end and less-demanding customers of an established business (incumbent) are attracted by progressive enhanced product/service offerings of a new entrant (disrupter). The disrupter will later adapt its business strategy to the evolution of the market, whereas the incumbents will focus rather on the most profitable and demanding customers by providing them with “ever-improving products and services.”²²⁹

Based on the above reasoning, it appears that the business model of the low-cost carriers (LCCs) fits overall into the new-market disruption. This resulted in the emergence of a new segment of passengers who could not afford traveling by air before, due to exorbitant airfares.²³⁰ Yet it is also true that the low-end and mainstream passengers are attracted by the affordable prices and improving service offerings of the low cost model (i.e. low-end disruption).²³¹ This dynamic of disruption and the evolution of performance over time is continuously changing at different paces, depending on the business models of the disrupters and the incumbents, but also on the evolution of the cyclic airline industry as a whole (i.e. Ultra LCCs, LCCs, hybrid carriers, and legacy carriers).

²²⁷ *Id.* at 48.

²²⁸ *Id.* at 47.

²²⁹ *Id.*

²³⁰ See John F. O'Connell & George Williams, *Passengers' Perceptions of Low Cost Airlines and Full Service Carriers – A Case Study Involving Ryanair, Aer Lingus, Air Asia and Malaysia Airlines*, 11 J. OF AIR TRANSP. MGMT. 259 (2015), https://dspace.lib.cranfield.ac.uk/bitstream/1826/1453/4/Passengers_perceptions_of_low_cost_airlines_and_full_service_carriers-TEXT-OConnell-Elsevier-2005.pdf [<https://perma.cc/V3VL-MDQS>].

²³¹ See *LCCs Playing Important Role in Driving Onboard Passenger Experience Improvements*, FUTURE TRAVEL EXPERIENCE (June 2014), <http://www.futuretravelexperience.com/2014/06/lccs-playing-important-role-driving-onboard-passenger-experience-improvements/> [<https://perma.cc/6MZ8-FJ9U>]. For instance, “[a]s Ryanair improved in quality, and as people started noticing Ryanair’s low prices, a new standard in the air travel market was created.” Sujith Nair et al., *Flexibility in Airline Business Models with Core Competence as an Indicator*, Article Presented to the 15th Air Transport Research Society World Conference 7 (2011), http://oa.upm.es/12480/2/INVE_MEM_2011_105228.pdf [<https://perma.cc/MBY3-G7W9>].

Another point worth mentioning is that a process of action and reaction emerges from the dynamic of disruptive innovation given that this concept can profoundly affect the functioning of established companies.²³² This leads to what Christensen called the “innovator’s dilemma,” which refers to the mindset of an established company when it has to decide whether it should maintain its products or services with the current high-value offerings or create a new product or service similar to the one offered by a disrupter.²³³ That said, the new product or service must be designed with basic or less sophisticated attributes to be able to compete with the new entrant, which targets mainstream customers (e.g., Legacy carriers versus LCCs, Ford versus Toyota).

The traditional airlines have been facing two types of disruptions concurrently, which is “unusual in the story of disruption,” according to Christensen.²³⁴ Thus, unlike incumbents in other industries, traditional carriers cannot move to more profitable upmarket tiers to maintain a certain competitive advantage over the new entrants. Christensen explained that incumbents in other industries have more options when disrupted, whereas “[t]he high fixed-cost structure of hub-and-spoke airlines means they can’t run away from the volume in the lower tiers of the market.”²³⁵ In fact, with the growing competition from LCCs on short-haul routes, traditional carriers in the United States and Europe have been trying to focus on flowing passengers through their hubs on longer routes.²³⁶ However, they are no longer in a position of supremacy due to the fierce competition from the Middle Eastern carriers on long-haul.²³⁷ Basically, the margins of the traditional U.S. and European airlines are getting squeezed on both sides—short- and long-haul.

²³² *Disruptive Innovation-Policy Implications*, VISIONARY ANALYTICS (Jan. 2016), <http://www.visionary.lt/disruptive-innovation-policy-implications> [https://perma.cc/97Q3-7GHH].

²³³ A.W., *What Disruptive Innovation Means*, THE ECONOMIST, Jan. 25, 2015, <http://www.economist.com/blogs/economist-explains/2015/01/economist-explains-15> [https://perma.cc/EM24-5E8V].

²³⁴ Jeremy Dann, *Disruption: Flying the Not-So-Friendly Skies*, HARV. BUS. SCHOOL (Oct. 20, 2003), <http://hbswk.hbs.edu/archive/3736.html> [https://perma.cc/7QF9-6G8E].

²³⁵ *Id.*

²³⁶ *See id.*

²³⁷ *See EU Carriers Battle Gulf Airlines’ Expansion*, DEUTCHE WELLE (May 28, 2015), <http://www.dw.com/en/eu-carriers-battle-gulf-airlines-expansion/a-18482670> [https://perma.cc/5M4L-YYD7].

Nevertheless, contrary to LCCs, the major Middle Eastern carriers operate through a different business model that does not necessarily target, at the very beginning, their operations, the mainstream passengers, or a new-market segment. In fact, another aspect that distinguishes the airline industry from other industries is its dependency on different components of the global air transport system; these include airport infrastructures, geographic location, and national institutional policies. These components combined would facilitate the process of disruption when acting in an international market with different comparative advantages. That said, favorable conditions, to a certain extent, might create an uneven playing field without being illegal, as discussed earlier.

Within that perspective, many major airlines have benefited from favorable conditions, which cannot be ignored in their development history. Perhaps the time frame of these advantages and the cyclic characteristic of the airline industry are the main parameters that make it challenging to conduct a reasonable comparison between the beneficiaries. For instance, as mentioned earlier, Emirates reported that it benefited from the government investment in infrastructure, plus start-up seed capital in 1985.²³⁸ Other airlines have been rescued, either directly through subsidies, or indirectly by application of bankruptcy laws (e.g. United Airlines in 2006).²³⁹

Airlines adopt an aggressive strategy to leverage the comparative advantages of a global disparate air transport system. However, the success of a new carrier relies above all on its ability to seize new opportunities and meet an eventual pent-up demand through a solid product offering in terms of quality and pricing.²⁴⁰ In a similar approach, Abeyratne briefly explained his definition of disruptive innovation in the airline industry based on the constraints raised by Christensen:

Disruptive innovation in the air transport industry is based on two strategies: service strategy and pricing strategy. These two combined justify the three basic features of a successful business strategy which displaces an existing market: availability of goods and services; good price and quality; and value for money. When

²³⁸ AIRLINES AND SUBSIDY: OUR POSITION, *supra* note 132, at 8.

²³⁹ Adams, *supra* note 63.

²⁴⁰ See *LCCs Playing Important Role in Driving Onboard Passenger Experience Improvements*, FUTURE TRAVEL EXPERIENCE (June 2014), <http://www.futuretravelexperience.com/2014/06/lccs-playing-important-role-driving-onboard-passenger-experience-improvements/> [https://perma.cc/5QWK-7RHT].

these practices are applied to the airline industry, one finds that an established carrier is much more vulnerable to disruptive innovation than most other industries.²⁴¹

Abeyratne explained a common misconception that considers a decrease in innovation as an adverse effect of increased competition. He clarified that, contrary to this erroneous assumption, “[c]ompetition and innovation are mutually endogenous.”²⁴² Aghion et al. further described the relationship:

First, an increase in competition leads to a significant increase in R&D investments by neck-and-neck firms. Second, an increase in competition decreases R&D investments by laggard firms. Moreover, this Schumpeterian effect²⁴³ is significantly stronger the shorter the time horizon. Third, increased competition affects industry composition by reducing the fraction of neck-and-neck sectors, and overall, competition increases aggregate innovation.²⁴⁴

Edwards and Day identified innovation as a crucial indicator that enables a company to build an emotional brand connection with its customers. They identified lack of real innovation as one of the five symptoms of malaise of consumer-led brands.²⁴⁵ These are: (1) an increased similarity between brands; (2) an inconsistent brand image and offer; (3) a lack of real innovation and surprise; (4) an increasing gulf between brand offer and brand capability; and (5) something hollow at the heart of the brand.²⁴⁶ In that sense, Edwards and Day described Emirates as a company with a record of successful brand innovation; that is, “an example of rapid-fire innovation” offering many on-board

²⁴¹ RUWANTISSA ABEYRATNE, COMPETITION AND INVESTMENT IN AIR TRANSPORT—LEGAL AND ECONOMIC ISSUES 108 (2016).

²⁴² *Id.* at 107.

²⁴³ “The Schumpeter effect is associated with the notion of creative destruction put forward in the 1930s by the celebrated economist Joseph Schumpeter, which introduced the process by which new innovations replace older technologies. Start-up airlines have to be mindful of being overrun by more established airlines, making creative destruction a common phenomenon in air transport.” *Id.* at n.84.

²⁴⁴ Philippe Aghion et al., *The Causal Effects of Competition on Innovation: Experimental Evidence* 4 (Harvard University, Working Paper, 2014), http://scholar.harvard.edu/files/aghion/files/causal_effects_of_competition.pdf?m=1393886457 [<https://perma.cc/8E4Q-ZWYA>].

²⁴⁵ HELEN EDWARDS & DEREK DAY, CREATING PASSION BRANDS: HOW TO BUILD EMOTIONAL BRAND CONNECTION WITH CUSTOMERS 23–24, 31 (2005).

²⁴⁶ *Id.* at 24, 28, 31, 34, 37.

options and innovative technologies to the passengers.²⁴⁷ Besides, it was highlighted that the airline had not tested the introduced innovations before the implementation stage. Tim Clark, Emirates CEO, explained: “We know what consumers want, and we use the experience of our own people to assess new ideas. If we tested innovation every time with a posse of consumers, we would lose the initiative. We prefer to back our judgement.”²⁴⁸

From a customer perspective, Emirates, Qatar Airways, and Etihad Airways provide high levels of service, especially for premium passengers. As mentioned earlier, in 2016 these carriers ranked first, second, and sixth, respectively, out of the 100 best airlines by Skytrax World Airline Awards.²⁴⁹ On the other hand, Delta ranked thirty-fifth, United ranked sixty-eighth, and American ranked seventy-seventh, according to the same Skytrax.²⁵⁰ That is, the three major U.S. airlines lagged behind the most recognized carriers in terms of customer service, including legacy and low-cost carriers based mostly in Asia (e.g. Singapore Airlines (third), AirAsia (twenty-third)) and Europe (e.g. Lufthansa (tenth), Air France (fourteenth)). Per Canadian carriers, Air Canada ranked thirty-first, ahead of WestJet (fiftieth), Porter Airlines (forty-seventh), and Air Transat (eighty-eighth).²⁵¹

Emirates has been successful in providing high quality service to its passengers flying either economy, business, or first class. According to *Fortune* magazine, the overall quality offered by Emirates outstrips that of its rivals in Europe

>at both the top and bottom ends of the market. Customers in Emirates’ economy class usually pay less compared with competing flights, while still receiving a superior level of service. Upper class customers, meanwhile, usually pay more, but receive greater exclusivity and comfort compared to upper class cabins on European airlines, especially in First Class²⁵²

Increasingly, many airlines have replaced first-class accommodations with business-class seats. Some planes are reconfigured to offer more capacity in competitive markets with potential existing and pent-up demand. However, for most airlines, the com-

²⁴⁷ *Id.* at 32.

²⁴⁸ *Id.* at 32–33.

²⁴⁹ *The World’s Top 100 Airlines in 2016*, *supra* note 147.

²⁵⁰ *Id.*

²⁵¹ *Id.*

²⁵² Cyrus Sanati, *Get Ready for Middle-East Airline Domination*, *FORTUNE* (Nov. 22, 2013), <http://fortune.com/2013/11/22/get-ready-for-middle-east-airline-domination/> [https://perma.cc/Q7RS-27BQ].

fort differences between business class and first class are shrinking, whereas the huge difference in price has not changed accordingly.²⁵³

Emirates, the world's largest A380 and Boeing 777 operator, uses Dubai as both a hinterland hub for routes to other cities in the Middle East and an hourglass hub for long-haul traffic.²⁵⁴ That is, they service global destinations by operating the sixth freedom while connecting Europe to Australia and the United States to Asia in addition to the fifth freedom route from New York City to Milan continuing on to Dubai.²⁵⁵ According to de Wit, the long-haul hourglass model and fleet composition (new and fuel-efficient aircraft) allows Emirates to significantly lower its cost per available seat-kilometer (CASK) more than its competitors in Europe.²⁵⁶ In addition to all of the foregoing, Emirates does not compete with the low-cost carriers, which operate rather in short and medium haul, hence its ability to generate high revenue per available seat-kilometer/mile (RASK/RASM).²⁵⁷

With the regard to market share, the Gulf trio achieved 11% of the international air market in 2012, as measured by available seat miles.²⁵⁸ That is way beyond the 2% recorded in 2002. By contrast, the market share of the U.S. airlines has decreased from 14% to 11% during the same period.²⁵⁹ This upward trend is expected to continue “growing by 12 to 15% annually this decade, according to IATA figures.”²⁶⁰

The advancement of Emirates Airlines, Etihad Airways, Qatar Airways, and Turkish Airlines—as “super-connectors” worldwide—has turned the evolution of the airline industry upside down. From 2003 to 2013, these airlines have achieved tremen-

²⁵³ Joan Voight, *Emirates is the World's Most Glamorous Airline*, ADWEEK (Oct. 12, 2014), <http://www.adweek.com/news/advertising-branding/emirates-worlds-most-glamorous-airline-160714> [<https://perma.cc/8XQH-H3YJ>].

²⁵⁴ GUILLAUME BURGHOUWT, AIRLINE NETWORK DEVELOPMENT IN EUROPE AND ITS IMPLICATIONS FOR AIRPORT PLANNING 16 (2007).

²⁵⁵ *Id.*

²⁵⁶ de Wit, *supra* note 183, at 24–26.

²⁵⁷ *Id.* at 24.

²⁵⁸ Sanati, *supra* note 252.

²⁵⁹ *Id.*

²⁶⁰ Gwyn Topham, *Gulf Airlines' Success Prompts Hostility from US and European Carriers*, THE GUARDIAN (Apr. 20, 2015), <http://www.theguardian.com/business/2015/apr/20/gulf-airlines-emirates-etihad-qatar-success-hostility-us-european-carriers> [<https://perma.cc/4GRQ-TKGU>]; see also Dresner et al., *supra* note 136, at 2.

dous performance in terms of revenue passenger kilometer (RPK).²⁶¹ The Middle Eastern carriers are expanding their networks, taking advantage of their strategic location between Europe, Asia, Africa, and America.²⁶² This constitutes a highly competitive advantage that allows these carriers to operate the fifth and sixth freedoms using their state-of-the-art hubs. By doing so, it is not a surprise that fares seem to be low on some routes “because of the efficiency of their long-haul-to-long-haul model.”²⁶³

Overall, the three Middle Eastern carriers seem to achieve common objectives by enhancing the connectivity between the four corners of the world. They operate in different but complementary strategies to ensure the growth of their network: Open Skies for Emirates, equity minority interests for Etihad, and alliances for Qatar Airways.²⁶⁴ As a result, this strategy is continuously challenging the other legacy carriers, which have traditionally operated direct routes between “strong local markets,” including the local market of the flag carriers.²⁶⁵ Accordingly, the three Middle Eastern carriers have raised competition to a new level in the international air travel market.

To conclude, as long as the allegations against the major Middle Eastern carriers—Emirates Airlines, Etihad Airways and Qatar Airways—are not proven to distort the market, passengers are left with no choice but to admit that these carriers are disruptive innovators in the air travel industry.

V. CONCLUSION

In their analysis of Gulf carrier competition with U.S. airlines, Dresner et al. said: “Claims that the Gulf carriers have an unfair competitive advantage and harm local markets and airlines have resulted in ‘a barrage of legal and political challenges to the Gulf carriers’ and calls to restrict further Gulf carrier access to markets in Europe and Canada, for example.”²⁶⁶ “[T]he West’s legacy airlines have not lacked for state protection of their

²⁶¹ *Super-Connecting the World*, THE ECONOMIST (Apr. 25, 2015), <http://www.economist.com/news/business/21649509-advance-emirates-etihad-and-qatar-latterly-joined-turkish-airlines-looks-set> [<https://perma.cc/QZ4M-HV24>].

²⁶² *Id.*

²⁶³ *Id.*

²⁶⁴ See Flanagan, *supra* note 113; *International and Government Affairs: Connectivity, Competition and Consumer Choice*, *supra* note 99.

²⁶⁵ SWELBAR, *supra* note 118, at 5–6.

²⁶⁶ Dresner et al., *supra* note 136, at 3 (internal citations omitted).

own,”²⁶⁷ yet it seems that the situation is changing when the Department of Justice has expressed concern over limiting Gulf carrier competition.²⁶⁸ Perhaps policy makers are concerned about protecting the interests of other stakeholders, such as Boeing and big U.S. airports, which benefit from the tremendous growth of the Middle-Eastern carriers.

In June 2016, the State Department held separate meetings to hear the concerns of two main groups of aviation stakeholders with respect to the alleged subsidies. The first group included players who oppose the position of the three U.S. airlines, including FedEx, Alaska Air Group, JetBlue Airways, Hawaiian Holdings, and the U.S. Travel Association. The second group represented mainly the plaintiff (i.e. the three major U.S. airlines) and several airline labor unions.²⁶⁹ Thereafter, in July 2016, the State Department held informal meetings with Qatar and UAE government officials.²⁷⁰ While no official announcements have been made yet, some sources reported a victory for the Middle Eastern carriers and others reported that both sides claimed triumph following the informal meetings.²⁷¹ Besides, the State Department is expected not to request official consultations despite the intense lobbying from the three major U.S. airlines.²⁷² Another meeting is expected “in the coming months” according to UAE Economy Minister Sultan Saeed Al Mansouri.²⁷³

²⁶⁷ *Super-Connecting the World*, *supra* note 261.

²⁶⁸ *The DOJ Doesn't Think Much of Lobbying Against Gulf Airlines*, FORTUNE (Oct. 13, 2015), <http://fortune.com/2015/10/13/airlines-justice-doj-gulf-trade-dispute/> [https://perma.cc/L4ZW-U958].

²⁶⁹ Susan Carey, *U.S. to Hold Talks with U.A.E., Qatar in Airline Dispute; But the State Department is Unlikely to Take Steps Sought by U.S. Airlines*, WALL ST. J. (June 27, 2016), <http://www.wsj.com/articles/u-s-to-hold-talks-with-u-a-e-qatar-in-airline-dispute-1467062989> [https://perma.cc/RFA6-YRHX].

²⁷⁰ *See id.*

²⁷¹ Anthony McAuley, *Victory For Gulf Airlines as US Government Ends Open Skies Row With No Further Action*, THE NATIONAL (July 26, 2016), <http://www.thenational.ae/business/aviation/victory-for-gulf-airlines-as-us-government-ends-open-skies-row-with-no-further-action> [https://perma.cc/M2U8-N7QL]; *see also* Brian Sumers, *U.S. Airlines Set to Lose Major Battle Against Gulf Carriers in Open Skies Debate*, SKIFT (June 28, 2016), <https://skift.com/2016/06/28/u-s-airlines-set-to-lose-major-battle-against-gulf-carriers-in-open-skies-debate/> [https://perma.cc/7C4C-Z4UV].

²⁷² Sumers, *supra* note 271.

²⁷³ Fareed Rahman, *Al Mansouri Optimistic About US-Gulf Carriers Spat Outcome*, GULF NEWS (Aug. 31, 2016), <http://gulfnews.com/business/aviation/al-mansouri-optimistic-about-us-gulf-carriers-spat-outcome-1.1888751> [https://perma.cc/U5GB-UANH].

In the context of Canada, the current approach toward restrictive bilateral ASAs with countries like the UAE benefits its national carrier Air Canada, but not consumers.²⁷⁴ Therefore, passengers [and tourists] are left with no choice but to pay high taxes and bear the cost of investments on airports.²⁷⁵ This situation probably persists because the Canadian company Bombardier has not benefited from the expanding Middle Eastern carriers' large aircraft orders for long-haul flights, as U.S. companies Boeing and Airbus have.²⁷⁶ Perhaps the new liberal Trudeau-led government may reconsider the merits of maintaining Canada's existing policy settings.

The aforesaid analysis of this article highlighted the conflict of interest with regard to subsidy allegations against the three major Middle Eastern carriers. This conflict might lead to political risks as a result of widely advertised allegations, which are fueled by accusations, counter-accusations, or rebuttals on the basis of analysis conducted separately by both sides. When such accusations persist with no way out, it is also because of a weak regulatory framework with respect to the procedure of settlement of disputes.

It must be noted that competition should not sound like a threat, but instead a driving force of an engine that requires checks on a regular basis. In other words, the process of air transport liberalization must be continuously assessed from both national and international perspectives. In fact, liberalization does not imply a shift toward less or weak regulation, but on the contrary, a milestone on the path towards a comprehensive approach for a strengthened and proactive regulation. That is, an approach by which competent bodies should put more emphasis on the continuous assessment of both effects and counter-effects of global regulatory measures. All of that requires growth-enhancing investments all along the process of liberalization.

The demand stimulation is of interest to global stakeholders, but at different levels; in fact, low fares as a result of the demand stimulation do not necessarily work in favor of airlines whose

²⁷⁴ See EMIRATES SUBMISSION TO THE CANADA TRANSPORTATION ACT REVIEW, *supra* note 162, at 3–4.

²⁷⁵ See *id.* at 5.

²⁷⁶ See Benjamin Zhang, *This Canadian Giant is Being Haunted by Its Decision to Challenge Airbus and Boeing*, BUS. INSIDER (Oct. 28, 2015), <http://www.businessinsider.com/bombardier-challenge-airbus-boeing-succeed-2015-10> [<https://perma.cc/XHH5-8B5T>].

profit margins are the worst in the air transport chain. Besides, the quality of service and passengers' rights are often compromised in the midst of growing demand. Hence the importance of a proactive and collaborative approach to achieve applicable regulations, to be elaborated and enhanced in concert with diverse stakeholders; the latter must include the passengers who are still very poorly represented in the global air transport system.

On the other hand, in a restricted market, regulations are generally rigid and contain clauses designed to protect the interests of (almost) one major player—the national carriers. Sometimes it is even difficult to tell who these clauses and regulatory texts benefit as a whole: the regulatory bodies or the flag carriers?

That being said, a comprehensive and proactive regulation has to take into consideration the disparate interests of the global community, where the end-users (passengers) are supposed to be the core of the air transport system as a whole (i.e. they are the *raison d'être* of the businesses and, most importantly, the regulators). Yet this is not the part that the main stakeholders would argue about when assessing a certain policy, but rather the weight attributed to different effects and counter-effects. Consequently, a balanced analysis is needed to assess existent and potential impacts of liberalization on each of the various stakeholders, many of which are emphasised in this article. In fact, it is clear that there is often a conflict of interest to be considered when political interests are on the table. In such a case, it would be a conflict in which one of the stakeholders might be considered a secondary player.

In that regard, a cost-benefit analysis should be considered for a balanced assessment of the current and potential impacts of a liberalization policy. The impacts on connectivity, tourism, employment, airlines, and other related industries (e.g. aircraft manufacturers in the United States and Europe) are among the areas that should be assessed in a cost-benefit analysis framework. On the basis of this, eventual corrective measures or regulatory texts, if any, could be recommended. Furthermore, as mentioned earlier, the assessment of air transport liberalization must be conducted on a regular basis. In that sense, the database and methodology of QUASAR is an important tool designed by the WTO to assess the degree of liberalization achieved by using a synthetic universal index, Air Liberalisation

Index (ALI).²⁷⁷ QUASAR methodology is carried out using four steps. The first is assessing the degree of liberalization of an ASA (i.e. the level of openness of the main market access features of bilateral ASAs) to construct a synthetic universal index, the ALI.²⁷⁸ For that purpose, the value of an ALI is determined by summing the attributed “points” to various features and their variant ASA provisions (e.g. capacity, withholding, tariffs, and designation).²⁷⁹ “The value of [an] ALI varies between zero, for very restrictive ASAs, and fifty, for very liberal ones.”²⁸⁰ The second step is categorizing ASAs by type; seven standard types of ASAs have been identified by combining the different clauses of an ASA relating to freedoms of air, capacity, withholding, tariffs, and designation.²⁸¹ The third step is combining the calculated ALIs with traffic data so as to obtain a Weighted ALI (WALI) by contracting state, region, pair of regions, type, level of traffic, etc.²⁸² For a given contracting State, the WALI provides an aggregate measure of the openness of its aviation policy.²⁸³ The fourth step is comparing the ASA network with the commercial network, which corresponds to the services that are effectively operated by airlines.²⁸⁴

Throughout this process, WTO works in concert with other stakeholders such as ICAO and IATA depending upon the data required by this analysis.²⁸⁵ ICAO has an important role to play in integrating this methodology in its TASA and facilitating its adoption by member States. But beforehand, ICAO should assist, in coordination with WTO, its member States in determining how to evaluate their air transport liberalization policy using QUASAR methodology.

Any concerns are to be resolved in a spirit of cooperation and in accordance with regulations in force, which should not be limited to the provisions of the bilateral ASAs when the subject matter of a mutual dispute is not covered by an existing ASA, as discussed earlier in this article (i.e. WTO and commercial dis-

²⁷⁷ WTO Secretariat, *Part A: Introduction to QUASAR*, WTO Doc. S/C/W/270, 12 (Nov. 30, 2006).

²⁷⁸ *Id.* at 11.

²⁷⁹ *Id.* at 12.

²⁸⁰ *Id.*

²⁸¹ *Id.* at 16. Over 70% of QUASAR bilateral ASAs fall under one of these seven types. *Id.*

²⁸² *Id.* at 17.

²⁸³ *See id.*

²⁸⁴ *Id.* at 18.

²⁸⁵ *See id.* at 10.

putes). Most importantly, any compromise must not ignore passenger rights. In fact, it is in nations' overall interest to serve the fundamental need of the people in terms of air transport connectivity. This will not be possible without a clear vision and concrete actions through a proactive approach. Clearly, "[v]ision without action is a daydream . . . [and a]ction without vision is a nightmare."²⁸⁶

²⁸⁶ Japanese Proverb, *Quotes*, QUOTES, <http://quotes.net/quote/8027> [<https://perma.cc/272B-MM8H>].



Comments



“FLY THE FRIENDLY SKIES”¹: HOW IMPLEMENTING A PRIVATE SECURITY SYSTEM CAN IMPROVE THE SAFETY OF THE NATION AND AN INDUSTRY

COURTNEY LUSTER*

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* Jane L. Levere, *Old Slogan Returns as United Asserts It is Customer-Focused*, N.Y. TIMES (Sept. 20, 2013), <http://www.nytimes.com/2013/09/20/business/media/old-slogan-returns-as-united-asserts-it-is-customer-focused.html> [https://perma.cc/WM9T-QAN5] (announcing United Airlines’ return to their vintage slogan “Fly the friendly skies”); *see also* FriendlySKy, *Come Fly Our Friendly Skies of United*, YOUTUBE (Dec. 13, 2015), <https://www.youtube.com/watch?v=5pA5rk9qktM> [https://perma.cc/N8GD-7LWG].

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I. “IT’S TIME TO FLY”²: INTRODUCTION

“SPIRIT AIRLINES PASSENGERS battered . . . ,”³ “Lawsuit: American Airlines Failed to Protect Girl,”⁴ “JetBlue [] passenger . . . interfering with flight safety . . . ,”⁵ “\$10 million [passenger assault] lawsuit filed against [a]irlines”⁶ These

² *United Airlines Deepens Commitment to ‘It’s Time to Fly’ Ad Campaign, Selects Barrie D’Rozario Murphy as New Advertising Agency*, PR NEWswire (Apr. 4, 2007, 1:00 PM), <http://www.prnewswire.com/news-releases/united-airlines-deepens-commitment-to-its-time-to-fly-ad-campaign-selects-barrie-drozario-murphy-as-new-advertising-agency-57853677.html> [https://perma.cc/7KHQ-BW4A] (discussing focus of United’s slogan “It’s Time to Fly”).

³ Nancy Dilon, *Spirit Airlines Passengers File Suit after In-Flight Fight*, DAILY NEWS (Apr. 7, 2016, 6:05 PM), <http://www.nydailynews.com/news/national/spirit-air-lines-passengers-file-suit-in-flight-fight-article-1.2592341> [https://perma.cc/6KM5-CF6J].

⁴ Mary Beth Quirk, *Lawsuit: American Airlines Failed to Protect Girl from Passenger Accused of Touching Her Inappropriately*, CONSUMERIST (Sept. 8, 2015), <https://consumerist.com/2015/09/08/lawsuit-american-airlines-failed-to-protect-girl-from-passenger-accused-of-touching-her-inappropriately/> [https://perma.cc/64A4-LQGP].

⁵ *Parver v. Jet Blue Airlines Corp.*, 649 F. App’x 539, 541 (9th Cir. 2016).

⁶ Francesca Fontana, *\$10 Million Lawsuit Filed Against American Airlines, Man Accused of Groping 13-Year-Old on Portland Flight*, THE OREGONIAN/OREGONLIVE (July 6, 2016, 11:42 AM), http://www.oregonlive.com/portland/index.ssf/2016/07/10_million_lawsuitFiled_again.html [https://perma.cc/GHX7-88LS].

are the types of headlines splattered over the front of newspapers and internet homepages. Despite the Transportation Security Administration (TSA) being the forefront of aviation security and safety, the typical TSA litigation tends to center around employment issues, corporate compliance, or petitioners' attempts to have their names removed from a "No-Fly" List.⁷ However, airline carriers are constantly defending themselves and bearing the brunt of safety litigation. In an attempt to mitigate safety concerns, flight attendants are no longer trained for just service in the sky. Today, stewards and stewardesses are trained in the fundamentals of aviation, security procedures, self-defense maneuvers, emergency protocol, and so much more.⁸ Sadly, it simply is not enough. In the past few years, the Federal Bureau of Investigation (FBI), who asserts jurisdiction in-flight, has logged around 170 crimes per year during flights.⁹ Airlines need to take more proactive steps to ensure safer skies for their passengers and their companies.

This comment proposes a new security program which should be implemented by airlines individually. Previous legal works have discussed the past aviation security systems, which were under private security companies; however, since the September 11, 2001 (9/11) terrorist attacks, the federal government has implemented a government controlled security system for air travel. So, current legal scholars discuss the constitutionality and legality of the current government safety procedures. Thus, for context, Part II seeks to discuss past and current security measures by TSA and airlines alike. Part III recommends the security protocol that should be adopted by the individual airlines; this is proposed as being an additional level of security which works in

⁷ Dep't of Homeland Sec. v. MacLean, 135 S. Ct. 913, 916 (2015) (hearing a suit from an air marshal after TSA fired him for talking to a reporter); Ardila Olivares v. Transp. Sec. Admin., 819 F.3d 454, 458 (D.C. Cir. 2016) (hearing a suit against TSA for the denial of an applicant to a Federal Aviation Administration certified flight school); Coleman v. Sec'y U.S. Dep't Homeland Sec., 649 F. App'x. 128, 129 (3rd Cir. 2016) (addressing a transportation security officer's suit for harassment under the ADA); Ibrahim v. U.S. Dep't Homeland Sec., 835 F.3d 1048 (9th Cir. 2016) (regarding a woman challenging placement on No Fly List and attorney's fees).

⁸ *Customized Compliance Training*, DELTA AIR LINES, http://www.delta.com/content/www/en_US/about-delta/business-programs/training-and-consulting-services/flight-attendant-training/customized-compliance-training.html [https://perma.cc/24VQ-LJNR] (last visited July 8, 2017).

⁹ Corinne Purtill, *Unfriendly Skies: The Disturbing Reality of Sexual Assault on Airplanes*, QUARTZ (Oct. 27, 2015), <https://qz.com/533256/the-disturbing-reality-of-sexual-assault-on-airplanes/> [https://perma.cc/5ESF-JMVW].

conjunction with the existing government security scheme. Part IV discusses the feasibility of the program in regard to finances, public opinion, and effectiveness. Finally, Part V analyzes potential legal issues, addressing how the program is not bound by the Constitution due to lack of state action and the aviation industry's additional protection for safety-related decisions under certain statutes.

II. THE "WINGS OF MAN": HISTORICAL BACKGROUND OF PAST AND CURRENT SAFETY PROGRAMS¹⁰

A. "ONE MISSION. YOURS."¹¹: THE CAPPS I PROGRAM

The first American airplane to be hijacked was over fifty-five years ago.¹² And, as the federal government has continued to improve aviation security through the years, terrorists and criminals continue to work to evade the system and find kinks in its armor. In 1998, with the sweeping advances in technology, the United States created the Computer Assisted Passenger Pre-Screening System (CAPPS I).¹³

Being the first of its kind, this program was not without its flaws. The CAPPS I terrorism prevention program was used and funded independently by each airline.¹⁴ Despite being a mandatory program, many felt that leaving the system to the discretion of the individual airlines created fundamental flaws in the system, such as cutting into profit incentives and airlines not having uniform security thresholds.¹⁵ However, the main identifiers of suspicious behaviors stemmed from passengers' conduct in the airport, their travel history, their home address, travel companions, date and method of ticket purchase, their destination, whether the tickets were round trip, as well as many other

¹⁰ *The Wings of Man*, WRITE NOW & THEN (June 30, 2015), <https://write-now-and-then.com/2015/06/30/the-wings-of-man/> [https://perma.cc/9BZ5-JHZ9] (discussing Eastern Airline's "Wings of Man" slogan campaign).

¹¹ Trevor Jensen, *TWA at Your Service in New DMB&B Ads*, ADWEEK: BRAND MARKETING (Sept. 20, 1999), <http://www.adweek.com/brand-marketing/twa-yo-ur-service-new-dmbb-ads-33622/> [https://perma.cc/MU7P-BADD] (explaining Trans World Airline's advertising history including their slogan "One mission. Yours.").

¹² Ian David Fiske, *Failing to Secure the Skies: Why America has Struggled to Protect Itself and How it Can Change*, 15 VA. J.L. & TECH. 173, 176 (2010).

¹³ *Id.* at 180.

¹⁴ *Id.* at 180–81.

¹⁵ *Id.*

factors.¹⁶ However, less than one year after implementation, the CAPPS I program was limited only to screening checked luggage out of the public's fear for its civil liberties.¹⁷ Thus, with CAPPS I not being employed to screen passengers and carry-on luggage, nineteen men walked onto four planes with box cutters and nefarious plans on September 11, 2001.¹⁸

B. "WE REALLY MOVE OUR TAILS FOR YOU"¹⁹: QUICK, COMPREHENSIVE, CAPPS II

While eleven of the nineteen terrorist responsible for 9/11 were identified as high-risk by the CAPPS I program, none were stopped or questioned because the terrorists did not check any baggage as required under the restricted system.²⁰ After this attack shook the nation, Congress created a more assertive system through the passing of the Aviation and Transportation Security Act.²¹ This Act officially created the aviation security agency known as TSA and amplified the current CAPPS I program through several modifications, creating CAPPS II.²²

The CAPPS II program differed from CAPPS I in that it not only monitored flight purchasing and travel patterns, but it also used data from commercial and government databases to confirm passengers' true identities and compare the identity against criminal wanted lists (both domestic and international), terrorist threat lists, and "No-Fly" and potential no fly lists.²³ Based on

¹⁶ *Id.* at 180; Leigh A. Kite, Note, *Red Flagging Civil Liberties and Due Process Rights of Airline Passengers: Will a Redesigned CAPPS II System Meet the Constitutional Challenge?*, 61 WASH. & LEE L. REV. 1385, 1394 (2004).

¹⁷ Michael J. DeGrave, Note, *Airline Passenger Profiling and the Fourth Amendment: Will CAPPS II be Cleared for Takeoff?*, 10 B.U. J. SCI. & TECH. L. 125, 130–31 (2004); Fiske, *supra* note 12, at 182 n.70 (citing DeGrave, *supra*, at 130).

¹⁸ Katie Cristina, Comment, *The TSA's New Precheck Is Beginning to Look a Lot Like CAPPS II: The Privacy Implications of Reviving the Tenets of the Failed Predecessor*, 78 J. AIR L. & COM. 617, 623–24 (2013).

¹⁹ *A History of Flight Attendants*, FEMININITY IN FLIGHT, <http://femininityinflight.com/laborhistory.html> [<https://perma.cc/G89P-KX6Z>] (last visited July 8, 2017) (explaining how Continental Airline's well thought out slogan, "We really move our tails for you," was poorly received by many stewardesses).

²⁰ DeGrave, *supra* note 17, at 148 (stating eleven of the nineteen September 11 attackers were identified through data patterns).

²¹ Aviation and Transportation Security Act, 49 U.S.C. § 44903(j)(2) (2006); Cristina, *supra* note 18, at 624.

²² Fiske, *supra* note 12, at 182.

²³ Cristina, *supra* note 18, at 625 (quoting Deborah von Rochow-Leuschner, *CAPPS II and the Fourth Amendment: Does It Fly?*, 69 J. AIR L. & COM. 139, 147 (2004)) (stating commercial and government databases would be used to consider certain factors of each traveler such as "race, religion, political affiliations,

the data compiled, all travelers were then to be coded into one of three risk categories.²⁴ A passenger's category then determined the amount of security screening they were subjected to before boarding, if they were even allowed to fly at all.²⁵ Finally, this program was to be completely in the control of and financed by the federal government, rather than by each airline individually as before.²⁶

Opposite the public's fear for national security and personal safety was the looming worry of Big Brother. The public's outcry over the intrusiveness of the government's reach in the name of security was deafening.²⁷ Constitutional fears of the government encroaching on American's Fourth,²⁸ Fifth,²⁹ and Fourteenth³⁰ Amendment liberties, as well as concerns in regard to the Privacy Act, caused Congress to halt the CAPPs II implementation until the potential issues had an identifiable solution.³¹ Due to these gaps in the program, and the failure to remedy them, CAPPs II never came to fruition.³²

credit history, employment, spending habits, charitable donations, unusual books purchased or checked out, and visits to certain websites.' But, . . . the TSA expressed . . . precise sources relied on were confidential."); Fiske, *supra* note 12, at 183.

²⁴ Cristina, *supra* note 18, at 624–25; Fiske, *supra* note 12, at 182–83.

²⁵ Cristina, *supra* note 18, at 624–25; Fiske, *supra* note 12, at 182–83.

²⁶ Fiske, *supra* note 12, at 183.

²⁷ *CAPPs II: Government Surveillance via Passenger Profiling*, ELECTRONIC FRONTIER FOUNDATION, <https://w2.eff.org/Privacy/cappsii/background.php> [<https://perma.cc/W2FU-DA3M>] (last visited July 8, 2017) ("CAPPs II would *force you* to surrender more of your privacy in order to travel . . . How much of your private life should the government be allowed to examine . . . CAPPs II could come to serve as an all-purpose dragnet . . . All of this "mission creep" has taken place before . . .") (emphasis added).

²⁸ U.S. CONST. AMEND. IV ("The right of the people to be secure in their persons, . . . and effects, against unreasonable searches and seizures, shall not be violated, . . . but upon probable cause . . .").

²⁹ U.S. CONST. AMEND. V ("No person shall be . . . deprived of life, liberty, or property, without due process of law . . .").

³⁰ U.S. CONST. AMEND. XIV, § 1 ("No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.").

³¹ Cristina, *supra* note 18, at 626 (referencing U.S. Gov't Accounting Office, GAO-04-385, *Aviation Security: Computer-Assisted Passenger Prescreening System Faces Significant Implementation Challenges* 4–5 (2004) (citing concerns such as data accuracy, inadequacy of appeal process, data security protocol, absence of policies for operation and use of the system, privacy concerns, and other)).

³² *Id.*

C. THE SECURE FLIGHT PROGRAM: “YOU ARE NOW FREE TO
MOVE ABOUT THE COUNTRY”³³

After the failure of the CAPPs programs, TSA was tasked with creating a new program which did not employ commercial data.³⁴ Specifically, the government wanted a program which identified terrorists only, rather than screening any potential passenger who might pose a risk.³⁵ Thus, Secure Flight was born. The program’s inspection process is limited to cross-referencing names with the “No-Fly” list,³⁶ “Selectee” databases³⁷ (which are a step below no-fly status), and the Center for Disease Control and Prevention (CDC) “Do Not Board List” only; this program does not cross-check any name with criminal lists or commercial databanks.³⁸ Secure Flight is even touted by TSA as “pro-

³³ Bernadette, *Southwest Airlines “Ding!” Commercial*, YOUTUBE (July 5, 2010), <https://www.youtube.com/watch?v=dohsnU7c7X0> [<https://perma.cc/2B6C-P2PY>] (showcasing Southwest’s “Ding! You’re now free to move about the country” tagline).

³⁴ *Privacy Impact Assessment for the Secure Flight Program*, U.S. DEP’T HOMELAND SEC. 1, 5 (Aug. 9, 2007), https://www.dhs.gov/xlibrary/assets/privacy/privacy_pia_tsa_secureflight.pdf [<https://perma.cc/2PQF-9724>] (“Secure Flight does not utilize commercial data verify identities, nor does it use algorithms to assign risk scores to individuals.”); see also *Security Screening*, TRANS. SEC. ADMIN., http://www.tsa.dhs.gov/what_we_do/layers/secureflight/index.shtm [<https://perma.cc/BME5-7DGT>] (last visited July 8, 2017) (“Secure Flight does NOT assign a score to individuals, use commercial data, or predict behavior.”); *Secure Flight Q & A*, THE TSA BLOG (June 2, 2009), <http://blog.tsa.gov/2009/06/secure-flight-q.html> [<https://perma.cc/F4HS-QFD9>] (“TSA does not collect or use commercial data to conduct Secure Flight watch list matching.”).

³⁵ Cristina, *supra* note 18, at 627–28; *Privacy Impact Assessment for the Secure Flight Program*, *supra* note 34; see also *Security Screening*, *supra* note 34; *Secure Flight Q & A*, *supra* note 34.

³⁶ *Ibrahim v. U.S. Dep’t Homeland Sec.*, 538 F.3d 1250, 1255 (9th Cir. 2008) (“... an agency called the Terrorist Screening Center ‘actually compiles the list of names ultimately placed on the No-Fly List.’ And the Terrorist Screening Center isn’t part of the Transportation Security Administration or any other agency named in section 46110; it is part of the Federal Bureau of Investigation.”); *Green v. Trans. Sec. Admin.*, 351 F. Supp. 2d 1119, 1121 (W.D. Wash. 2005) (“[Those], identified on a “No-Fly List,” consist[] of individuals who are prohibited from flying altogether. [Those], identified on a “Selectee List,” consist[] of individuals who must be ‘selected’ by air carriers for additional screening before they are permitted to fly.”).

³⁷ *Ibrahim*, 835 F.3d at 1255; *Green*, 351 F. Supp. 2d at 1121 (“[Those], identified on a “Selectee List,” consist[] of individuals who must be ‘selected’ by air carriers for additional screening before they are permitted to fly.”).

³⁸ Fiske, *supra* note 12, at 186–87; Michael Isaac, Note, *Privatizing Surveillance: The Use of Data Mining in Federal Law Enforcement*, 58 RUTGERS L. REV. 1057, 1069 (2006) (“... Congress barred the Secure Flight Program from accessing commercial databases . . .”).

tect[ing] privacy . . . [by] collect[ing] the minimum amount of personal information . . . necessary”³⁹ Despite the fact Secure Flight matches passengers on all flights entering, exiting, and flying over the United States,⁴⁰ some still have concerns about this program’s ability to detect threats using such a limited pool of information.⁴¹

D. GLOBAL ENTRY AND TSA PRE-CHECK VOLUNTARY PROGRAMS: “A WHOLE DIFFERENT ANIMAL”⁴²

The United States Customs and Border Protection (CBP) and TSA have recently created two voluntary screening programs to aid them and passengers, Global Entry and Pre-Check.⁴³ Global Entry is CBP’s expedited clearance program for travelers entering the United States who have been pre-approved and determined to be low-risk.⁴⁴ In order to be approved for Global Entry, applicants must provide correct and complete information, be a citizen of certain countries, and be free of any criminal convictions or pending criminal charges.⁴⁵ Applicants must also verify

³⁹ *Security Screening: Secure Flight*, TRANSP. SEC. ADMIN., www.TSA.gov/travel/security-screening (click the plus sign beside the “Secure Flight” title to drop-down information regarding this program) [<https://perma.cc/R9TB-KJGW>] (last visited July 8, 2017).

⁴⁰ Steve Sadler, *TSA Secure Flight Program*, TRANSP. SEC. ADMIN.: MEDIA: PRESS (Sept. 18, 2014), tsa.gov/news/testimony/2014/09/18/tsa-secure-flight-program.

⁴¹ *Security Screening*, *supra* note 39.

⁴² *Frontier’s ‘A Whole Different Animal’ Livery Has a Heartbeat*, AIRPIGZ (May 14, 2010, 10:10 PM), <http://airpigz.com/blog/2010/5/14/frontiers-a-whole-different-animal-livery-has-a-heartbeat.html> [<https://perma.cc/PVM6-KM6K>] (explaining how Frontier implemented its slogan, “Frontier. A Whole Different Animal,” in an innovative way).

⁴³ *Trusted Traveler Programs: Global Entry*, U.S. CUSTOMS & BORDER PROT., <https://www.cbp.gov/travel/trusted-traveler-programs/global-entry> [<https://perma.cc/VES6-TVVV>] (last visited July 8, 2017); *TSA Pre✓®*, TRANSP. SEC. ADMIN., <https://www.tsa.gov/precheck> [<https://perma.cc/9MJW-425U>] (last visited July 8, 2017).

⁴⁴ Elizabeth Stern, *Ins and Outs of US Trusted Traveler Programs*, LAW 360 (Nov. 23, 2015), <https://www.law360.com/articles/730929/ins-and-outs-of-us-trusted-traveler-programs> [<https://perma.cc/4AA8-6HKN>].

⁴⁵ *Id.*; *Trusted Traveler Programs: Global Entry: Eligibility for Global Entry*, U.S. CUSTOMS & BORDER PROT., <https://www.cbp.gov/travel/trusted-traveler-programs/global-entry/eligibility> [<https://perma.cc/3C3K-K2KT>] (last visited July 8, 2017) [hereinafter *Eligibility for Global Entry*] (allowing U.S. citizens, U.S. lawful permanent residents, and citizens of Colombia, the United Kingdom, Germany, the Netherlands, Panama, Singapore, South Korea, and Mexican nationals to apply for Global Entry, but there may be additional requirements of individuals depending on their country of citizenship).

they have never been sentenced for a customs, immigration, or agriculture regulation violation, and they are not currently being investigated by any federal, state, or local law enforcement agency.⁴⁶ After completing the required forms, an applicant must then schedule an interview and biometrics scan at a pre-selected location.⁴⁷ With Global entry approval, members also receive TSA Pre-Check benefits.⁴⁸ The processing time for Global Entry may vary, but on average the CBP says it takes on average about “[fifteen] business days to be conditionally approved for the program,” and once approved “membership will be valid for [five] years unless [] revoked”⁴⁹ The Global Entry security system reduces the time it takes passengers to navigate the airport by about seventy percent because it provides more surety for the airlines and their passengers.⁵⁰

Pre-Check is a TSA program which allows for accelerated movement through airport security.⁵¹ At available airports, TSA Pre-Checked travelers do not need to remove their shoes, belts, or coats or remove laptops and liquids from their bag.⁵² Pre-Check members also stroll through a standard metal detector rather than the now typical x-ray body scanners or pat downs.⁵³ The program also requires an online application, an interview, and fingerprinting.⁵⁴ According to TSA’s Former Administrator, Pre-Check strengthens security because the TSA’s ability to “find the proverbial needle in the haystack is improved every time [it is] able to reduce the size of the haystack.”⁵⁵ While some individuals still express constitutional and privacy concerns, these are

⁴⁶ Stern, *supra* note 44; *Eligibility for Global Entry*, *supra* note 45.

⁴⁷ *Trusted Traveler Programs: Global Entry*, *supra* note 43.

⁴⁸ Seth Kugel, *Global Entry and Company: Worth the Price?*, N.Y. TIMES (Apr. 24, 2014), https://www.nytimes.com/2014/04/24/travel/global-entry-and-company-worth-the-price.html?_r=0 [<https://perma.cc/X3UJ-TZGR>] (stating over “1.3 million people have” applied for Global Entry and about “3,200 people [] sign[] up [for TSA PreCheck] each day”); Stern, *supra* note 44.

⁴⁹ *Applying for Global Entry: How Do I Apply for Global Entry?*, U.S. CUSTOMS & BORDER PROT., https://help.cbp.gov/app/answers/detail/a_id/1671/~/applying-for-global-entry [<https://perma.cc/4PPM-YVUZ>] (last visited July 8, 2017).

⁵⁰ Kugel, *supra* note 48.

⁵¹ *Id.*

⁵² *TSA Pre✓®*, *supra* note 43.

⁵³ *Id.*

⁵⁴ *TSA Pre✓®: Applying for TSA Pre✓®*, TRANSP. SEC. ADMIN., <https://www.tsa.gov/precheck/faq> [<https://perma.cc/VSG2-SC53>] (click the plus sign beside the question “How do I apply for TSA Pre✓®?” for information regarding the application process).

⁵⁵ John S. Pistole, *Addressing Counterterrorism, Risk-Based Security, and TSA’s Vision for the Future of Aviation Security*, TRANSP. SEC. ADMIN.: MEDIA: PRESS (Mar. 5,

minimal, if not nonexistent, due to the program's voluntary nature and the fact that benefits are conferred on passengers approved as "low-risk," but the ability to fly is not taken away if a passenger is not approved.⁵⁶ However, while airport security has made leaps and bounds since the 9/11 attacks, the skies are still not safe enough to protect the airline industry from litigation.

III. "YOU'RE GOING TO LIKE US."⁵⁷: THE PROPOSED SECURITY MEASURES

Not only do airlines struggle with the constant fear of another terrorist attack, which would be a crippling economic hit,⁵⁸ but airlines also combat unruly passengers daily, which cost them substantial amounts of money.⁵⁹ From 2007 to 2015, there have been over 49,084 cases reported of unruly passengers during flight.⁶⁰ Examples of what is considered unruly passenger behav-

2012), <https://www.tsa.gov/news/speeches/counterterrorism-risk-based-security-and-tsa's-vision-future-aviation-security-0> [<https://perma.cc/ZXR9-Y2XM>].

⁵⁶ Jay Stanley, *TSA Once Again Considering Using Commercial Data to Profile Passengers*, ACLU: FREE FUTURE (Jan. 11, 2013, 11:09 AM), <https://www.aclu.org/blog/tsa-once-again-considering-using-commercial-data-profile-passengers> [<https://perma.cc/MPL4-KLPM>].

⁵⁷ jlt30, *1983 TWA Commercial*, YOUTUBE (Dec. 31, 2008), <https://www.youtube.com/watch?v=OMVi8H1gNjg&feature=youtu.be> [<https://perma.cc/V3ZC-HGVF>] (posting a previously aired Trans World Airline commercial with the written and sung slogan "You're going to like us.").

⁵⁸ Christ Kjelgaard, *New Terror Attack Could Be Costly for Airlines*, NBC NEWS (Aug. 30, 2007), http://www.nbcnews.com/id/20515498/ns/business-us_business/t/new-terror-attack-could-be-costly-airlines/ [<https://perma.cc/WFK9-TZQX>] (estimating another aviation attack would cost the airline industry "anywhere from \$214 billion to \$420 billion"); Matthew Philips, *Why Do Airlines Always Lose Money? Hint: It's Not Due to Taxes or Fuel Costs*, FREAKONOMICS BLOG (June 24, 2011, 12:01 PM), <http://freakonomics.com/2011/06/24/why-do-airlines-always-lose-money-hint-its-not-due-to-taxes-or-fuel-costs/> [<https://perma.cc/C2TT-VMMV>] (discussing the huge economic hit after the September 11 terrorist attacks which caused a low demand for air travel while the airlines refused to raise flight prices to close the gap).

⁵⁹ Alex Davies, *Unruly Passengers Are Becoming A Serious Problem For Airlines*, BUSINESS INSIDER (Dec. 18, 2013, 11:31 AM), <http://www.businessinsider.com/unruly-passengers-airlines-flight-rising-expensive-2013-12> [<https://perma.cc/JJ3U-79QW>] (citing the Int'l Air Transp. Ass'n quoting the cost of defusing an unruly passenger between \$10,000 and \$200,000); *Fact Sheet: Unruly Passengers*, INT'L AIR TRANSP. ASS'N, https://www.iata.org/pressroom/facts_figures/fact_sheets/Documents/fact-sheet-unruly-passengers.pdf [<https://perma.cc/8LN3-AFQQ>] ("Unruly passenger incidents . . . lead to significant operation disruption and costs for airlines."); *Unruly Passengers: The Issue*, INT'L AIR TRANSP. ASS'N, <http://www.iata.org/policy/safety-security/pages/unruly-passengers.aspx> [<https://perma.cc/HG7A-T9GN>].

⁶⁰ *Id.*

ior include illegal consumption of narcotics, verbal and physical confrontations with crew members or passengers, making threats, sexual abuse or harassment, riotous behavior, and the list goes on.⁶¹ The majority of these unruly incidents are related to the passenger's consumption of alcohol.⁶² These incidents are unique in that cabin crew cannot call the authorities in-flight for immediate assistance; this is one of the many reasons crew members and airlines must put themselves in the best position to prevent or mitigate these situations. Crew members are alone in the air, and they are the sole authority. While airlines train crews to deal with the situation in the air, it would be more beneficial to them and their passengers if crew were never put in that situation. A spokesperson for the House Transportation Committee commented on the use of private contractors in aviation security, stating "They exceed[] or provide[] the same level of security as TSA screeners."⁶³ A dual program utilizing advanced data screening and an in-airport system implemented by individual airlines could provide crew and passengers such a safe guard.

A. DATA "IS READY WHEN YOU ARE"⁶⁴: RECOMMENDED USE OF DATA

These days, companies now use big data to produce big results: hotels use it to identify bad weather and stranded travelers, and then send targeted emails; pizza companies also detect bad weather and power outage areas; and some retailers even use it to determine when a shopper is likely pregnant.⁶⁵ With such amazing capabilities, how can airlines not use it for the safety of their passengers and the protection of their companies? Big

⁶¹ INT'L AIR TRANSP. ASS'N, GUIDANCE ON UNRULY PASSENGER PREVENTION AND MANAGEMENT 13 (2d ed. 2015), *available at* <https://www.iata.org/policy/Documents/2015-Guidance-on-Unruly-Passenger-Prevention-and-Management.pdf> [<https://perma.cc/5AVN-2YBZ>].

⁶² *Id.* at 18.

⁶³ Ron Nixon, *New Law Clears the Way for Airports to Drop T.S.A. Screeners*, N.Y. TIMES (Mar. 15, 2012), <http://www.nytimes.com/2012/03/16/us/airports-with-new-law-are-freer-to-split-from-tsa.html> [<https://perma.cc/2QXG-ABRV>].

⁶⁴ *Trademarks & Slogans*, DELTA AIR LINES, INC., http://www.delta.com/content/www/en_US/about-delta/corporate-information/trademarks-slogans.html [<https://perma.cc/3BMU-SKJP>] (last visited July 8, 2017) (providing a list of Delta's slogans through their company's history).

⁶⁵ Chuck Schaeffer, *5 Retail Big Data Examples with Big Paybacks*, CUSTOMER RELATIONSHIP MGMT. SOFTWARE SOLUTIONS, <http://www.ctmsearch.com/retail-big-data.php> [<https://perma.cc/QJA5-E3WN>] (last visited July 8, 2017).

data is “[e]xtremely large data sets that may be [analyzed] computationally to reveal patterns, trends, and associations, especially relating to human [behavior] and interactions.”⁶⁶ When people or companies mention big data use, images of dystopian societies and dehumanizing effects flash in people’s minds. However, big data is not near as perverse as people imagine; rather, it is the most effective solution for an ideal means of travel.

Through commercial databases, airline carriers can cross-reference names, dates of birth, addresses, phone numbers, and more to confirm a traveler’s identity,⁶⁷ as well as identify potential security risks. Commercial data can then be used to inform airlines of possible suspicious activity through alerts of suspicious websites recently visited, unusual books purchased, erratic spending habits (such as gun purchases, large quantities of ammunition, unusual chemicals, etc.), length of residence, whether a residence is owned or rented, key words from emails, occupation, and so much more. For instance, data could have flagged the recent Fort Lauderdale Airport shooter, who had begun selling all his belongings, including big items like his car.⁶⁸ Airlines can even take into account whether a passenger has gone through and been cleared by a trusted traveler program or Pre-Check. With this information, airlines can do their own security scans of checked bags, or perhaps code a person’s boarding pass to alert gate agents to double check this passenger’s person and carry-on. However, it is important to note this

⁶⁶ *Big data*, ENGLISH OXFORD LIVING DICTIONARY, https://en.oxforddictionaries.com/definition/big_data [<https://perma.cc/7DET-D8PE>] (last visited July 8, 2017).

⁶⁷ Cristina, *supra* note 18, at 624; John Yoo, *NSA Surveillance: Issues of Security, Privacy and Civil Liberty: Article: The Legality of the National Security Agency’s Bulk Data Surveillance Programs*, 10 I/S: J.L. & POL’Y FOR INFO. SOC’Y 301, 308 (2014) (“The 9/11 hijackers themselves provide an example . . . commercially available data might have turned up ties between every single one of the al Qaeda plotters . . . two hijackers [were] known to the CIA in the summer of 2001 to have been in the country . . . [Two] had rented apartments in their own name[s] and were listed in the San Diego phone book . . . Both [], the leader of the 9/11 al Qaeda cell, and [another hijacker], who piloted one of the planes into the World Trade Center, had lived there with them . . . [several] used the same frequent flier number . . . five hijackers used the same phone number [] when booking their flights; the remaining hijackers shared addresses or phone numbers with one of [the] hijackers [] who was in the United States in violation of his visa at the time.”).

⁶⁸ *Fort Lauderdale Airport Shooter Charged, Could Face Death Penalty*, KTLA 5 (Jan. 7, 2017, 9:04 AM), <http://ktla.com/2017/01/07/fort-lauderdale-airport-shooter-came-here-specifically-to-attack-fbi-says/> [<https://perma.cc/MC8J-982M>].

function and added safety measure is not meant to replace the TSA with private airlines' own version of security, nor is TSA meant to rely on the airlines to alert them to potential dangerous passengers through their data. TSA should still continue their normal performance of security, including their "random screening, regardless of whether an alarm is triggered" by the airlines.⁶⁹ Private airline's ability to screen all passengers against commercial databases merely provides the industry an extra layer of safety.

While TSA screens terrorist watch lists, it does not utilize criminal records of local, state, and federal law enforcement agencies; this is a disservice to airline security.⁷⁰ While some of the trusted traveler programs use it, the vast majority of people who travel via airlines are not checked.⁷¹ Airlines checking their passenger list against even basic police reports could be immensely beneficial. Crimes such as public intoxication, disorderly conduct, sexual assault, indecent exposure, and battery could alert the airlines enough to help them take small preventative measures against potential problems. For instance, if a cross-check alerts the airline to a sex offender, and the offender's seat is slotted beside an unaccompanied minor or such, the airline could reassign them to window seat or an emergency exit aisle with the single seats. If a passenger has numerous instances of public intoxications or disorderly conduct, a note could be made on the steward's manifests to be wary of passenger's alcohol intake and mannerisms, so they may offer water and food consumption to delay serving more alcohol. If air marshals are on a particular flight, airlines could strategically seat them amongst potential problem individuals. The use of public

⁶⁹ *Airport Screening Procedures*, U.S. DEP'T HOMELAND SEC., <https://www.dhs.gov/airport-screening-procedures> [<https://perma.cc/5D8H-CVLG>].

⁷⁰ Improving Pre-Screening of Aviation Passengers Against Terrorist and Other Watch Lists: Hearing Before the Subcomm. on Econ. Sec., Infrastructure Prot., and Cybersecurity of the Comm. on Homeland Sec. House of Representatives, 109th Cong. 78, 29 (2005) [hereinafter Watch Lists Hearings]; Cristina, *supra* note 18, at 637–38 (“...CBP uses commercial and law enforcement data, which domestic flights, through Secure Flight, expressly do not have congressional authority to use.”).

⁷¹ This parallels nicely with the Federal Rules of Evidence. Under Rule 404(b), a defendant's past crimes, wrongs, or other acts can be admissible to prove “motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident.” Under Rules 413 and 414, past sexual assault or child molestation charges can be brought in to show propensity. Finally, under Rule 609, an individual's prior convictions may be introduced in court in order to impeach their credibility. FED. R. EVID. 404(b), 413, 414, 609.

records and other data could be extremely helpful in mitigating potential safety issues in-flight or possible greater threats; with data, airlines can “know why you fly.”⁷²

B. “MUCH MORE THAN FLYING”⁷³: PROPOSED IN-AIRPORT RESPONSE SYSTEM

While this is in no way intended to supplant TSA security measures, added security measures could complement and aid the government in their goal of a safer America. Many argue that intelligence based screening is not as effective as physical security measures and that data security alone is not sufficient.⁷⁴ However, any singular system compounded with other security measures could prove far more effective. Thus, a dual system utilizing both data intelligence and physical security agents could have impressive capabilities.

Upon arrival at Birmingham-Shuttlesworth International Airport, a series of stanchions and ropes for crowd control were set up in front of each airline’s check in counters. At the queue’s entrance two podiums manned by security agents. As two queues formed behind each podium, people would hand the security guard their passport and be subjected to a series of questions: “What are you traveling for today? . . . What was your business in our country? . . . Oh, you studied abroad, what class did you take? . . . Who was your professor?” Before a traveler could even check-in for their flight, check their luggage, and obtain a boarding pass, the traveler had to get past the first round of security questions.⁷⁵ This is not the only airport to implement this type of security measure.⁷⁶ Israeli airline, El Al, and highly targeted Tel Aviv’s Ben Gurion Airport, are world re-

⁷² ERAUPRCWA, *American Airlines-Home*, YOUTUBE (Mar. 21, 2009), https://www.youtube.com/watch?v=_rtpszbxaoE [<https://perma.cc/MHG2-SQAB>] (featuring the advertisement with American Airline’s “We know why you fly” slogan).

⁷³ aomd88, *Iberia “Mucho más que volar” (1994)*, YOUTUBE (June 10, 2014), <https://www.youtube.com/watch?v=6iKF4UxIcX4> [<https://perma.cc/YFD9-9C7T>] (playing an original 1994 Iberia Airlines commercial with their tagline “Much more than flying”) (translated for effect).

⁷⁴ Fiske, *supra* note 12, at 175, 179.

⁷⁵ While being blessed with the opportunity to study abroad, the author experienced this layered security system. It struck the author as surprisingly effective even at the time.

⁷⁶ Daniel Wagner, *What Israeli Airport Security Can Teach the World*, HUFFINGTON POST (May 17, 2014 8:19 AM), http://www.huffingtonpost.com/daniel-wagner/what-israeli-airport-secu_b_4978149.html [<https://perma.cc/DAE2-YBA8>].

nowned for their aviation security.⁷⁷ While some advanced technology is used, such as the use of pressure chambers to trigger any possible explosive within checked baggage, ordinary metal detectors are the standard practice for checking persons.⁷⁸ Accordingly, the key to Israeli security does not lie solely in technology, but rather in the in-airport security guards. Highly trained personnel focus on travelers' behavioral cues, eye contact, tone of voice, pace of speech, and other signals while asking specific inquiries.⁷⁹ Israeli security is actually working on creating a similar procedure through kiosks.⁸⁰ These machines would assess factors such as traveler's body temperature, hearth rate, and blood pressure while the traveler checks in.⁸¹ At some point during the process, certain statements or questions would be presented which would provoke a response from a guilty party.⁸² That traveler could then be subject to a personal one-on-one screening by an agent. There are some administrators though who do not want to go this route, for they feel the key component that makes Israeli security so infallible is the human element.⁸³

In a 2010 interview with the Cable News Network (CNN), the former head of security for El Al, Isaac Yeffet, stated the key to security is to "[s]top relying on technology."⁸⁴ He went on to clarify that "[t]echnology can help the qualified, well-trained human being but cannot replace him."⁸⁵ El Al relies on a unique, and quite controversial, method of passenger monitoring: profiling.⁸⁶ However, this is not the ugly, hate-based method people assume.⁸⁷ Rather, El Al's profiling is a comprehensive,

⁷⁷ *Id.*

⁷⁸ *Id.*

⁷⁹ *Id.*

⁸⁰ Brian Palmer, *What's So Great About Israeli Security?*, SLATE (Jan. 3, 2011 3:38 PM), http://www.slate.com/articles/news_and_politics/explainer/2011/01/whats_so_great_about_israeli_security.html [<https://perma.cc/7VR8-HV8R>].

⁸¹ *Id.*

⁸² *Id.*

⁸³ Wagner, *supra* note 76.

⁸⁴ *How the Israelis Do Airport Security*, CNN (Jan. 11, 2010 5:06 PM), <http://www.cnn.com/2010/OPINION/01/11/yeffet.air.security.israel/> [<https://perma.cc/8E3B-A3BU>] [hereinafter *Yeffet Interview*].

⁸⁵ *Id.*

⁸⁶ Ralph Goodman, *Guest Post: Why Israeli Airport Security is so Effective*, ANNE'S OPINIONS (Mar. 26, 2016), <https://anneinpt.wordpress.com/2016/03/26/guest-post-why-israeli-airport-security-is-so-effective/> [<https://perma.cc/6XQ8-2974>] (last visited July 8, 2017); Palmer, *supra* note 80; Wagner, *supra* note 76.

⁸⁷ Goodman, *supra* note 86.

algorithmic process more in the realm of methods like *Criminal Minds* and *Lie to Me*.⁸⁸ Israel's aviation security agents are exceptionally trained and profile with an eye more neutral and impartial than the average citizen.⁸⁹ Yeffet demonstrated with the 2002 shoe bomber, "[He] got a British passport in Belgium, not [] England . . . he bought a one-way ticket from Paris to Florida. He paid cash. He came to the airport with no luggage. What else do I need to know that this passenger is suspicious?"⁹⁰ While hindsight is twenty-twenty, this type of profiling awareness has proven successful for El Al in real time. This process is done through questioning *every* passenger by well-educated, multilingual, and highly trained agents.⁹¹ Before any preconceived notions form, agents objectively question passengers and perceive through their answers and actions whether more screening is necessary.⁹² El Al also constantly tests its security measures, and if a false risk gets past the security agent, they are fired immediately—for in this line of work, a failure is costly.⁹³ This type of screening, which gets more rigorous the closer you get to the plane, could also help airlines watch for overly intoxicated passengers who could cause problems once in the air.⁹⁴

But physical procedures do not just stop at questioning. As mentioned, pressure chambers ensure that checked baggage is free from pressurized explosives.⁹⁵ Some have recommended implementing canine teams into the screening process.⁹⁶ Dogs have been aiding and saving their best friends for decades. Law enforcement agencies have employed the help of canine units for over a century, and military forces benefited from their help

⁸⁸ *Id.*; *Criminal Minds: About Criminal Minds*, CBS, http://www.cbs.com/shows/criminal_minds/about/ [<https://perma.cc/J7Y9-474Y>] (last visited July 8, 2017); *Lie to Me*, Fox, 2009–2011 <http://www.imdb.com/title/tt1235099/> [<https://perma.cc/Y6FP-GSCB>] (last visited July 8, 2017).

⁸⁹ Goodman, *supra* note 86; Wagner, *supra* note 76.

⁹⁰ Yeffet Interview, *supra* note 84.

⁹¹ *Id.*

⁹² *Id.*

⁹³ *Id.*

⁹⁴ Palmer, *supra* note 80 ("Officials think of passengers as passing through a series of concentric circles, with increasing scrutiny as they get closer to boarding the plane."); Wagner, *supra* note 76 (citing official's belief of a circular security system with increasing intensity the closer a passenger gets to the plane).

⁹⁵ Wagner, *supra* note 76.

⁹⁶ Katherine A. Lowe, Comment, *Safety in the Sky: Will Reforming and Restructuring the TSA Improve Our Security or Merely Infringe On Our Rights?*, 81 J. AIR L. & COM. 291, 306–07 (2016).

in several wars.⁹⁷ Canine teams have proven to be a highly effective means for the detection of explosives and accelerants.⁹⁸

Airlines could also implement more stringent requirements for individuals who check firearms. When attending any Texas gun show, before entering the lobby to get tickets, individuals encounter a large pavilion with a tables where individuals check and secure all guns. Attendants ensure all firearms are unloaded and zip-tie the sliding mechanism, revolver chamber, or bolt action down to render the firearm inoperable.⁹⁹ Shows also require all ammunition be in sealed containers.¹⁰⁰ In the commercial aviation environment, this same process could be implemented before checked firearms get stored in cargo. Furthermore, checked items that are inherently dangerous in general could have a separate pick up location away from the main baggage claim areas. While airports still have large expanses of unsecured, public areas, a minor change such as this could prevent tragedies similar to the recent Fort Lauderdale incident.¹⁰¹ Further, security officers could be placed strategically in public areas to patrol and ensure safety.¹⁰² This could be as simple as inquiring with the local police department if any off-duty police officers want to pick up a part-time shift.¹⁰³ While some of these suggestions seem relatively simple, they could have a huge impact on aviation security as a whole.

⁹⁷ *Police Canines in History*, DOGS FOR LAW ENFORCEMENT (2013), <http://www.dogsforlawenforcement.org/police-canines-in-history.html> [https://perma.cc/35RN-R58W] (last visited July 8, 2017).

⁹⁸ *Id.*; see also Lowe, *supra* note 96, at 306–07.

⁹⁹ *Show Rules*, PREMIER GUN SHOWS, LLC 1 (Apr. 22, 2014), <http://premiergunshows.com/wp-content/uploads/Exhibitor-Rules.pdf> [https://perma.cc/WNX6-F5H2].

¹⁰⁰ *Id.*

¹⁰¹ Catherine E. Shoichet et al., *Fort Lauderdale Airport Suspect ‘Came Here Specifically’ to Attack, FBI Says*, CNN (Jan. 7, 2017, 1:01 pm), <http://www.cnn.com/2017/01/06/US/fort-lauderdale-airport-incident/> [https://perma.cc/DC3X-MA4U].

¹⁰² Palmer, *supra* note 80; Wagner, *supra* note 76 (“Armed security personnel patrol the terminal.”).

¹⁰³ The author’s father was a police officer for over thirty-five years, and he worked a part time job through the department as security for a movie theater on Friday and Saturday nights.

IV. “DEFY OBSTACLES”¹⁰⁴: THE FEASIBILITY OF THE PROPOSED SECURITY SYSTEM

While the best laid plans sound fantastic in theory, the practicality of a strategy always needs to be assessed with a skeptical and realistic view. Three chief concerns arise with the implementation of such a program: cost, coverage, and constitutionality. However, these concerns are manageable when structuring this program through the correct scope.

From the airline’s perspectives, the first natural worry is potential efficiency scarifies in implementing and screening all passengers without delay. One of the core focuses of major airlines is what is classified as “D0.”¹⁰⁵ D0 is the goal of a plane’s estimated departure being exactly on time.¹⁰⁶ An airline’s mission is to be exactly within their projected departure and arrival times, for every minute is money.¹⁰⁷ In 2015, the cost of a U.S. airline delay was \$65.43 per minute.¹⁰⁸ So, when it comes to extensive security measures, it is natural for airlines to be uneasy about the possibility of delays due to the number of passengers they transport. A common misconception is that only small airlines can implement such extensive security, which is why El Al is so successful.¹⁰⁹ This paints an incorrect image in people’s minds of El Al being a tiny airline, yet the Israeli airline transported nearly five million passengers in 2015.¹¹⁰ In forty years, El Al has

¹⁰⁴ Rick Seaney, *If Presidential Candidates Adopted Airline Slogans*, ABC NEWS (Oct. 12, 2012), <http://abcnews.go.com/Travel/presidential-candidates-adopted-airline-slogans/story?id=17452000> [https://perma.cc/JZ8U-AYLE] (using Air Canada’s “Defy Obstacles” slogan as an example).

¹⁰⁵ Terry Maxon, *American Airlines Group to Pay Employee Bonuses if American, US Airways Outdo Operations of Rivals*, DALLAS MORNING NEWS (Jan. 2014), <http://www.dallasnews.com/business/airlines/2014/01/23/american-airlines-group-to-pay-employee-bonuses-if-american-us-airways-outdo-operations-of-rivals> [https://perma.cc/4GX8-KAGF].

¹⁰⁶ Roseflyer, *Airlines Definition of On-time in Various Places?*, AIRLINERS.NET (2012), <http://www.airliners.net/forum/viewtopic.php?t=535365#p7282059> [https://perma.cc/9DX6-72WG].

¹⁰⁷ *U.S. Passenger Carrier Delay Costs*, AIRLINES FOR AMERICA (2015), <http://airlines.org/dataset/per-minute-cost-of-delays-to-u-s-airlines/> [https://perma.cc/Z9XZ-R8TH] (last visited July 8, 2017).

¹⁰⁸ *Id.*

¹⁰⁹ von Rochow-Leuschner, *supra* note 23, at 141 (arguing “. . . American flag carriers transport more people in two days than El Al does in a year.”).

¹¹⁰ *El Al Israel Airlines Rebounds in \$106 Million 2015 Net Profit*, TRAVEL WORLD ONLINE (Mar. 26, 2016, 3:45 PM), [http://www.travelworldonline.in/Airlines-news-detail.aspx?news=EL-Al-Israel-Airlines-rebounds-in-\\$106-million-2015-net-profit](http://www.travelworldonline.in/Airlines-news-detail.aspx?news=EL-Al-Israel-Airlines-rebounds-in-$106-million-2015-net-profit) [https://perma.cc/9G56-PWQD].

not had one aviation tragedy nor any significant delays.¹¹¹ Yeffet even confirmed that if a passenger is not a threat, it will not take trained personnel long to determine that—usually with just a few questions.¹¹² When flying out of England, while passengers might be asked questions by several security agents, the process only takes about five minutes. With most airlines recommending passengers show up to the airport up to two hours before take-off, passengers have plenty of time to answer a few questions and still get to their gate with plenty of time to spare.¹¹³

The next fear, no doubt, would be the monetary aspect. While airlines are profit-driven businesses, the misguided argument that they have a “strong incentive to provide the most minimal security possible”¹¹⁴ ignores the toll that security attacks and unruly passengers take on airlines’ profit. After the 9/11 attacks, in the first week alone, U.S. airlines were estimated to have lost between one and two billion dollars in revenue.¹¹⁵ When considering the potential liabilities, \$18,000 to fund a canine team does not seem as excessive.¹¹⁶ The safety and security of passengers has a direct effect on airline’s prosperity. U.S. carriers should do all they can to aid TSA for the safety of the nation and the security of their industry.¹¹⁷ As Yeffet stated so eloquently, “It costs money, but once you save lives, it’s worth all the money”¹¹⁸

¹¹¹ *Yeffet Interview*, *supra* note 84.

¹¹² *Id.*

¹¹³ *Check-in and Arrival Times*, AMERICAN AIRLINES, <https://www.aa.com/i18n/travel-info/arrival-times.jsp> [<https://perma.cc/X5YM-C37B>] (last visited July 8, 2017) (asking passengers arrive “as early as possible” but at least two hours before, “especially if [their] checking bags”); *Check-In Requirements*, DELTA AIR LINES, INC., http://www.delta.com/content/www/en_US/traveling-with-us/check-in/requirements.html [<https://perma.cc/CQH5-JXNU>] (last visited July 8, 2017) (stating “The early bird catches the plane” but states under the “Overall Requirements” section travelers should arrive “at the airport [two] hours prior to departure when traveling within the United States”); *Check-in and Airport Processing Times*, UNITED AIRLINES, INC., <https://www.united.com/web/en-US/content/travel/airport/process/default.aspx> [<https://perma.cc/4Q39-HHWA>] (last visited July 8, 2017) (providing travelers with a chart recommending arrival time based on where their destination is).

¹¹⁴ Fiske, *supra* note 12, at 181.

¹¹⁵ Naveen Kumar et al., *The Economic Impact of September 11, 2001 on the Aviation Industry*, GLOBAL TRADE, TRANSP., & LOGISTICS 1, 2 (Jul. 13, 2003), <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.203.1445&rep=rep1&type=pdf>.

¹¹⁶ Lowe, *supra* note 96, at 307.

¹¹⁷ *Id.* at 315.

¹¹⁸ *Yeffet Interview*, *supra* note 84.

V. "A SYMBOL OF FREEDOM"¹¹⁹: THE LEGALITY OF THE RECOMMENDED SCHEME

But under this proposed system, might airlines open themselves up to the ultimate lawsuit, violating the laws of this great nation? Airlines already fight numerous safety-related lawsuits,¹²⁰ and some are even still struggling with litigation arising from the 9/11 attacks.¹²¹ As with the CAPPS programs, it seems the most pressing concerns would be the plan's legality under privacy laws and its constitutionality under certain amendments. Yet, this proposed system does not involve the government, so it will not be subject to the Constitution's privacy constraints.¹²² However, even if some governmental connection was found, these security procedures are still constitutional and protect individual liberties due to the system's lack of deprivation without process and the aviation industry's authority under legislative statute.

A. "FLY THE AMERICAN WAY"¹²³: CONSTITUTIONALITY REQUIRES STATE ACTION

When an American is deprived of any form of life, liberty, or property, the rallying cry always tends to be, "This is unconstitutional!" However, in order to invoke the Constitution, the viola-

¹¹⁹ Video Archeology, *1999 - Commercial - Southwest Airlines - A Symbol of Freedom - 1-800-IFLY-SWA*, YOUTUBE (Apr. 20, 2014), <https://www.youtube.com/watch?v=YKIUpV7LX6U> [<https://perma.cc/63XC-L5BR>] (ending the video with Southwest Airline's slogan at the time "A Symbol of Freedom").

¹²⁰ *Unruly Passengers*, *supra* note 59.

¹²¹ Justin Bachman, *Why Two Airlines Are Still Fighting 9/11 Lawsuits*, BLOOMBERG (July 19, 2013, 3:16 PM), <https://www.bloomberg.com/news/articles/2013-07-19/why-two-airlines-are-still-fighting-9-11-lawsuits> [<https://perma.cc/U3K9-M4K4>].

¹²² Since this program does not trigger constitutional requirements, because of lack of government involvement, the individual analysis of this program under the Fourth, Fifth, and Fourteenth Amendments are extraneous and beyond the scope of this article.

¹²³ *Fly the American Way*, AMERICAN AIRLINES, https://www.aa.com/i18n/plan-travel/destinations/fly-the-american-way.jsp?locale=EN_AU&anchorLocation=undefined&reportedTitle=offering%20more%20across%20the%20Pacific&reportedPosition=0&url=undefined&_locale=&repositoryName=undefined&repositoryId=undefined [<https://perma.cc/QC6N-6VBT>] (last visited July 8, 2017); *see also* The Brar's, *American Airlines-Fly The American Way Commercial*, YOUTUBE (July 4, 2012), <https://www.youtube.com/watch?v=cb7qEuJcYrk> [<https://perma.cc/PPU2-V5WW>] (showcasing American Airline's past slogan "Fly the American Way"); ntsfdsuvkm, *Fly the American Way!*, YOUTUBE (Mar. 17, 2013), <https://www.youtube.com/watch?v=x7ySq3QoBvQ> [<https://perma.cc/Z9XK-JCC5>].

tion needs to be committed by either the government itself or a private company acting as an extension of the government, also known as “state action.”¹²⁴ In this proposed system, the airline carriers on their face are private entities that cannot violate the Constitution, for the document does not reach to private acts of discrimination.¹²⁵ The U.S. Supreme Court has carved out two exceptions where private entities are liable for acting under the power of the government, the public function exception and the significant state involvement exception.¹²⁶

1. “*Going Beyond Expectations*”:¹²⁷ The Public Function Exception

In the first exception, the Court held that where a private entity takes on all the accoutrements of the state and undertakes a public function, the entity is deemed to be an extension of the government and is susceptible to constitutional liability.¹²⁸ However, this does not mean businesses that are open for public benefit are automatically liable. Rather, corporations are accountable when they adopt functions which are “traditionally exclusively reserved to the State.”¹²⁹ Not only has the government never run an air carrier business, the public function exception has been effectively rendered dead, and courts regularly avoid applying it.¹³⁰ So this exception would not pose a prob-

¹²⁴ The Civil Rights Cases, 109 U.S. 3, 11 (1883) (“It is State action of a particular character that is prohibited. Individual invasion of individual rights is not the subject-matter of the amendment.”).

¹²⁵ *Id.*

¹²⁶ See *Burton v. Wilmington Parking Authority*, 365 U.S. 715, 722 (1961); *Marsh v. Alabama*, 326 U.S. 501, 506 (1946).

¹²⁷ S. Jayasankaran, *Malaysian Airline Launches Campaign as Firm Recovers*, WALL ST. J. (Dec. 4, 2002, 12:01 AM), <https://www.wsj.com/articles/SB1038944049385669033> [<https://perma.cc/YNA2-G4YZ>].

¹²⁸ *Marsh*, 326 U.S. at 506 (holding when private “facilities are built and operated primarily to benefit the public and since their operation is essentially a public function, it is subject to state regulation.”).

¹²⁹ *Jackson v. Metropolitan Edison Co.*, 419 U.S. 345, 352 (1974).

¹³⁰ *Flagg Bros. Inc. v. Brooks*, 436 U.S. 149, 164 (1978) (holding that “a State’s mere acquiescence in a private action” does not convert that into state action); *Hudgens v. Nat’l Labor Relations Bd.*, 424 U.S. 507, 517 (1976) (holding a private shopping mall was not subject to the Constitution because it did not fit the public function test); *Jackson*, 419 U.S. at 350 (holding the mere fact a “business is subject to extensive state regulation does not by itself convert its action into that of the state for purposes of [The Constitution].”); *González-Maldonado v. MMM Healthcare, Inc.*, 693 F.3d 244, 248 (1st Cir. 2012) (“Governments often do provide healthcare . . . but the public function exception applies to ‘traditionally exclusively’ public functions. Thus, running a utility company, or running a

lem, for courts would be unlikely to apply it in any situation, including this system.

2. “Fly with Friends”¹³¹: Significant State Involvement Exception

The second possible exception that triggers constitutional liability is the significant state involvement doctrine.¹³² Where a private entity is using the state in order to enforce their discriminatory action, the court can find that private company liable.¹³³ Yet, this comment’s proposed security system does not rely on any action by the state or government enforcement. Additionally, even extensive regulation, such as the Federal Aviation Administration’s (FAA) directives to the airline industry, does not impart state action on a private entity.¹³⁴ Thus, due to there being no “state action,” airline carriers would not be bound by the Constitution.

3. “Something Special in the Air”¹³⁵: Not TSA’s Private Program Offering

As stated previously, this program is not supposed to replace or work under the discretion of TSA. TSA does currently have a government allowance titled the “Screening Partnership Program.”¹³⁶ Under this program, an airport can elect, with the approval of TSA, to privatize their security screening.¹³⁷ However,

school, do not qualify. Neither does operating a [health management organization].”).

¹³¹ *This is My Favorite Brand!*, BRAND HISTORY, <https://brand-history.com/austrian-airlines-osterreichische-luftverkehrs-ag/austrian-airlines/austrian-air-lines-omileicht-fluge-buchen-auf-www-austrian-com-schneller-einfacher-am-gunstigsten-buchen-auf-austrian-com-austrian-fly> [https://perma.cc/TLE9-L8PW] (last visited July 8, 2017).

¹³² *Burton v. Wilmington Parking Authority*, 365 U.S. 715, 722 (1961).

¹³³ *Barrows v. Jackson*, 346 U.S. 249, 259–60 (1953); *Shelley v. Kraemer*, 334 U.S. 1 (1948).

¹³⁴ *Jackson*, 419 U.S. at 350–51.

¹³⁵ GloopTrekker, *American Airlines Commercial - 1990*, YOUTUBE (Mar. 29, 2010), https://www.youtube.com/watch?v=JG_1psnyxB4 [https://perma.cc/YVC2-M9JQ] (featuring American Airlines’ slogan “Something special in the air.”); see also 80stvthemes, *American Airlines Something Special in the Air 1984 Commercial*, YOUTUBE (May 4, 2012), <https://www.youtube.com/watch?v=afy4RuOmDG0> [https://perma.cc/Z9Q3-RYTZ].

¹³⁶ *Screening Partnership Program*, TRANSP. SEC. ADMIN., <https://www.tsa.gov/for-industry/screening-partnerships> [https://perma.cc/8ET6-WUB2] (last visited July 8, 2017).

¹³⁷ *Id.*; *Airports Who Opt Out of TSA Screening are Still Regulated by TSA*, TSA BLOG (Nov. 19, 2010), <http://blog.tsa.gov/2010/11/airports-who-opt-out-of-tsa-screening.html> [https://perma.cc/Z3JV-YVSQ].

despite the security checkpoints being managed by a private security company, the procedures and techniques are still regulated and controlled by TSA, all the way down to the technology.¹³⁸

Under this program, TSA still controls the system in its entirety; the only delegation is the daily passenger screening.¹³⁹ TSA does not allow an airport to just privatize portions of the security system; it is an all or nothing approach.¹⁴⁰ Additionally, TSA has only approved certain private security vendors for airports to use and will not approve an airport's choice of security firm unless it "determines that there is a need to add additional vendors to the current . . . [p]rogram"¹⁴¹ These private security companies' employees are also trained at the TSA Academy in Glynco, Georgia, before receiving employment at an airport for aviation security,¹⁴² and they are to earn similar wages and benefits as a normal TSA agent.¹⁴³ The worst feature of this government controlled program is airports cannot increase number of screeners or staff to make the security process more efficient or quicker because TSA controls the amount of agents in the contract with the security firm.¹⁴⁴

Regrettably, TSA has also been criticized for making the shift to private screeners arduous on airports, resulting from a lengthy application process, lack of the airport's control in the contract development, absence of information about the transition process, and regular denial of applications.¹⁴⁵ Since TSA itself reviews the applications, the agency only approves an air-

¹³⁸ *Screening Partnership Program*, *supra* note 136; *Airports Who Opt out of TSA Screening are Still Regulated by TSA*, *supra* note 137.

¹³⁹ *Screening Partnership Program*, *supra* note 136.

¹⁴⁰ *Id.* (under "Can an airport authority apply to use contract screeners at some airport security checkpoints but not all; a partial opt-out?" question heading) ("TSA will not accept applications to privatize a portion of an airport's security screening operations . . . [for it does] not provid[e] a successful environment . . .").

¹⁴¹ *Id.*

¹⁴² *Id.*

¹⁴³ Justin Bachman, *More Airports May Ditch the TSA and Use Private Security Instead*, SKIFT (May 27, 2016, 1:00 PM), <https://skift.com/2016/05/27/more-airports-may-ditch-the-tsa-and-use-private-security-instead/> [<https://perma.cc/ZC89-3XW5>]; *see also* Justin Bachman, *How Airports Can Get Rid of TSA Screeners*, BLOOMBERG (May 27, 2016, 6:00 AM), <https://www.bloomberg.com/news/articles/2016-05-27/how-airports-can-get-rid-of-tsa-screeners> [<https://perma.cc/85VV-2QPT>].

¹⁴⁴ Bachman, *Airports May Ditch TSA*, *supra* note 143.

¹⁴⁵ *Id.*

port's request for privately controlled security when "a clear and substantial advantage to [switch private screeners for government agents] emerges."¹⁴⁶ Thus, under this system, airport security, even privatized, is clearly state action and not truly under the control of the airports or airlines. The proposed system is in addition to and separate from government regulation in order to give airlines better control over the safety of their planes and passengers.

4. *"To fly. To Serve."*¹⁴⁷: *Even if Courts Found State Action, The Program is Still Constitutional*

However, even if state action could be found, or TSA is somehow involved, this program would still not run afoul of the constitution for several reasons. First, while the U.S. Supreme Court has found the right to travel fundamental,¹⁴⁸ it has not found the right to a specific mode of transportation.¹⁴⁹ Thus, to avoid the system, travelers merely choose a different method of traveling. Additionally, while one issue with CAPPS was the deprivation of traveler's rights due to banning them from all flights without redress, this system does not infringe the liberty interest of international flights or the property interest from contracting to fly with the air carrier.¹⁵⁰ This proposed system does not arbitrarily ban a passenger based on data alone; rather, data's role simply alerts the airlines to potential for additional screening, a possible seat change, or a monitoring of alcohol intake. If upon in-airport questioning the airline realizes a passenger is belligerently drunk or is concerned about a safety issue, the carrier can bump the passenger to the next flight while they sober up, or cut off alcohol intake. If safety is a concern, airlines have a special authority under law to deny travelers passage.¹⁵¹

¹⁴⁶ Brian Finch & David Inserra, *Airports are Fed Up with the TSA. Here's Why it will be Hard to Break Up with Them*, FOX NEWS (May 19, 2016), <http://www.foxnews.com/opinion/2016/05/19/airports-are-fed-up-with-tsa-heres-why-it-will-be-hard-to-break-up-with-them.html> [<https://perma.cc/SA97-TNBZ>].

¹⁴⁷ British Airways, *Aviators, British Airways to Fly to Serve*, YOUTUBE (Sept. 22, 2016), <https://www.youtube.com/watch?v=A4JdQi60an0> [<https://perma.cc/S2UR-6R2A>] (promoting British Airways' slogan "To Fly. To Serve.").

¹⁴⁸ *United States v. Guest* 383 U.S. 745, 760 (1966); *Kent v. Dulles*, 357 U.S. 116, 125 (1958); *Crandall v. Nevada*, 73 U.S. 35 (1868).

¹⁴⁹ *Gilmore v. Gonzales*, 435 F.3d 1125, 1137 (9th Cir. 2006); *Miller v. Reed*, 176 F.3d 1202, 1204 (9th Cir. 1999).

¹⁵⁰ Kite, *supra* note 16, at 1414, 1417–18.

¹⁵¹ 49 U.S.C. § 44902 (allowing airlines to refuse service to travelers who "is or might be inimical to safety") (emphasis added).

Under this system, airlines are not conducting searches at the behest of the government or in conjunction with authorities.¹⁵² And, while investigating and interrogating potential sources of peril is typically a function of government enforcement agencies, courts have held that corporation jobs that investigate the possibility of crime are not transformed automatically into government actors.¹⁵³ Similar to how courts found a college campus, a bank, a racetrack, and an amusement park security system not to be state action, the airline's security measures would also be advancing the interest of the private companies rather than the government's interest.¹⁵⁴ Moreover, courts have found private individuals acting to protect their "*financial interest* and not to vindicate the interest of the state" are assuredly not government actors subject to the Constitution.¹⁵⁵ It is when the government takes an active role, establishing control over an entity and taking responsibility for them, that protection under the Constitution is warranted.¹⁵⁶ This security system is not a joint action with the government or its agents. Rather these are private enti-

¹⁵² DeGrave, *supra* note 17, at 137 ("Administrative searches conducted by the airlines are considered state action because they are done at the request of the government. Unlike police searches, administrative searches do not result from a suspicion of criminal activity, past or present.").

¹⁵³ *Gallagher v. Neil Young Freedom Concert*, 49 F.3d 1442, 1457 (10th Cir. 1995) (a college campus' security measures were not deemed to be a state function); *United States v. Garlock*, 19 F.3d 441, 443–44 (8th Cir. 1994) (holding the banks' investigation of disappearance of money was not state action and thus was not subject to constitutional liability); *United States v. Francoeur*, 547 F.2d 891, 893–94 (5th Cir. 1977) (holding the amusement park security's search would have violated plaintiff's rights if it had been done by government actors, but the search does not violate constitutional rights here because it was a private search conducted for "purely private reasons"); *United States v. Maxwell*, 484 F.2d 1350, 1352 (5th Cir. 1973) (holding "the fourth amendment [sic] does not apply to searches and seizures conducted by private parties."); *Minnesota v. Buswell*, 460 N.W.2d 614, 619–20 (Minn. 1990) (holding when the government's involvement of racetrack security "amounts to no more than responding to requests for arrest" the constitution and the Fourth Amendment are not triggered).

¹⁵⁴ *Gallagher*, 49 F.3d at 1457; *Garlock*, 19 F.3d at 443–44; *Francoeur*, 547 F.2d at 893; *Buswell*, 460 N.W.2d at 619–20; *Maxwell*, 484 F.2d at 1352; Nicholas Poppe, *Discriminatory Deplaning: Aviation Security and The Constitution*, 79 J. AIR. L. & COM. 113, 133 (2014).

¹⁵⁵ *People v. Houle*, 91 Cal. Rptr. 874, 876 (Cal. Ct. App. 1970) (holding that a bondsman who seized and arrested the defendant, for being in possession of drugs, was lawful due to the bondsman protecting his own private interests) (emphasis added).

¹⁵⁶ *Gallagher*, 49 F.3d at 1457; *Garlock*, 19 F.3d at 443–44; *Francoeur*, 547 F.2d at 893; *Buswell*, 460 N.W.2d at 619–20; *Maxwell*, 484 F.2d at 1352; Poppe, *supra* note 154.

ties, the airlines, protecting their own private financial and safety interests, as well as their passengers' interest.¹⁵⁷

Significantly, immunity from the constitution due to being private actors holds true "even when the government requires [] certain security measures be taken."¹⁵⁸ So despite airlines being regulated by the FAA, and given certain security protocol by other government agencies, security agents would still have the ability to search passengers and their carry-ons without incurring constitutional liability. Equally distinguishable, the federal government provides statutory authority to all air carriers to refuse service to passengers, or their property, who "is, or *might be*, inimical to safety."¹⁵⁹ Thus, an airline not required to adopt security, exerting its statutory authority and not implicating the government in the process, is safe from the Fourth Amendment and constitutional liability.¹⁶⁰

5. "Up[,] Up[,] and Away"¹⁶¹: Airline's Security Measures are Protected Under Statute

Apart from the Constitution and the Fourteenth Amendment, there is still the fear of discrimination rearing its ugly head, especially in the light of America's current cultural tensions.¹⁶² Under 49 U.S.C. § 44902, can airlines refuse passengers under the justification that their race is deemed to be inimical to safety? Despite the wide latitude given to air carriers in regard to their power of refusal,¹⁶³ the same law still respects America's core values and protects individuals from discrimination.¹⁶⁴

¹⁵⁷ *Gallagher*, 49 F.3d at 1457; *Garlock*, 19 F.3d at 443–44; *Francoeur*, 547 F.2d at 893–94; *Maxwell*, 484 F.2d at 1352; *Buswell*, 460 N.W.2d at 619–20.

¹⁵⁸ *Garlock*, 19 F.3d at 444; *State v. Sanders*, 448 A.2d 481, 486 (N.J. Super. Ct. App. Div. 1982) (holding that while the government requires casinos to "establish detailed security procedures," casino security guards still have the ability to behave in a quasi-police manner without government liability.).

¹⁵⁹ 49 U.S.C. § 44902 (2012) (emphasis added).

¹⁶⁰ *Poppe*, *supra* note 154, at 134; *see also Ibrahim v. U.S. Dep't Homeland Sec.*, 538 F.3d 1250, 1257 (9th Cir. 2008).

¹⁶¹ RCA Corp., Photograph of Record Cover, *TWA (Trans World Airlines), Up Up and Away with Arthur Fiedler and the Boston Pops*, AVIATION MUSEUM & LIBR. COLLECTION <http://www.flysfo.com/museum/aviation-museum-library/collection/14110> [<https://perma.cc/FN36-VM45>] (last visited July 8, 2017).

¹⁶² Genevieve Wood, *Why Has America Become a Fractured Republic?* Yuval Levin Explains., DAILY SIGNAL (June 21, 2016), <http://dailysignal.com/2016/06/21/why-has-america-become-a-fractured-republic-yuval-levin-explains/> [<https://perma.cc/JW8P-8TS2>].

¹⁶³ 49 U.S.C. § 44902 (2012).

¹⁶⁴ § 40127 ("Prohibitions on discrimination").

While the in-airport response system promotes objective assessments of each person, this calculation is based on a person's conduct, traveling methods, data flags, and more. This security judgment though is not based on race, national origin, or such factors. Airlines are *prohibited* from subjecting a passenger "to discrimination on the basis of race, color, national origin, religion, sex, or ancestry."¹⁶⁵ The statute does not give airlines carte blanche to discriminate; courts have clarified the protection that is provided under these statutes for the carriers and for the individuals. While § 44902 provides airlines with broad discretion on what they deem safety issues, this power is not absolute.¹⁶⁶ The airline's discretionary authority "under § 44902 is not 'a license to discriminate.'"¹⁶⁷ A decision to not transport a passenger due to safety concerns must be based on a rational belief and exercised in good faith,¹⁶⁸ and thus the decision is not a subjective one. Objectively, courts have held that airlines cannot be held liable for their decisions based on hindsight; the decision must be assessed as reasonable "in light of th[e] facts and circumstances" at the time the opinion was formed.¹⁶⁹ If the decision is found to have been "arbitrary and capricious," the airline is subject to liability,¹⁷⁰ and a multitude of courts hold actions motivated by race or religious animus are inherently arbitrary and capricious.¹⁷¹ Prejudice and discrimination can never be legitimate nor does it bear any relation to preserving safe skies.¹⁷²

¹⁶⁵ *Id.*

¹⁶⁶ *Dasrath v. Cont'l Airlines, Inc.*, 467 F. Supp. 2d 431, 443 (D.N.J. 2006).

¹⁶⁷ *Adams v. U.S. Airways Group*, 978 F. Supp. 2d 485, 499 (E.D. Pa. 2013) (quoting *Bayaa v. United Airlines, Inc.*, 249 F. Supp. 2d 1198, 1205 (C.D. Cal. 2002)); *see also Alshrafi v. Am. Airlines, Inc.*, 321 F. Supp. 2d 150, 162 (D. Mass. 2004) (quoting *Bayaa*, 249 F. Supp. 2d at 1205).

¹⁶⁸ *Dasrath*, 467 F. Supp. 2d at 444.

¹⁶⁹ *Al-Watan v. Am. Airlines, Inc.*, 658 F. Supp. 2d 816, 824 (E.D. Mich. 2009); *Dasrath*, 467 F. Supp. 2d at 444; *Al-Qudhai'Een v. Am. W. Airlines, Inc.*, 267 F. Supp. 2d 841, 846 (S.D. Ohio 2003).

¹⁷⁰ *Adams*, 978 F. Supp. 2d at 495; *Al-Watan*, 658 F. Supp. 2d at 825; *Al-Tawan v. Am. Airlines, Inc.*, 570 F. Supp. 2d 925, 931 (E.D. Mich. 2008); *Cerqueira v. Am. Airlines, Inc.*, 520 F.3d 1, 14 (1st Cir. 2008); *Dasrath*, 467 F. Supp. 2d at 434; *Ruta v. Delta Airlines, Inc.*, 322 F. Supp. 2d 391, 397 (S.D.N.Y. 2004); *Alshrafi*, 321 F. Supp. 2d at 162; *Al-Quadh'ai'Een*, 267 F. Supp. 2d at 846.

¹⁷¹ *Adams*, 978 F. Supp. 2d at 495; *Al-Watan*, 658 F. Supp. 2d at 825; *Al-Tawan*, 570 F. Supp. 2d at 931; *Cerqueira*, 520 F.3d at 14; *Dasrath*, 467 F. Supp. 2d at 434; *Ruta*, 322 F. Supp. 2d at 397; *Alshrafi*, 321 F. Supp. 2d at 162; *Al-Quadh'ai'Een*, 267 F. Supp. 2d at 846.

¹⁷² *Alshrafi*, 321 F. Supp. 2d at 162.

B. “NEVER FORGET YOU HAVE A CHOICE”¹⁷³: THE PRIVACY OF A PERSON’S DATA

Big data is making its way into every field and industry, for it possesses a way for massive amounts of information to be analyzed, revealing certain trends and patterns about individuals. This is done through a process called data mining.¹⁷⁴ However, while big data seems to bring concerns of privacy and data accuracy, Americans tend to give their data away like candy for companies like LexisNexis, Oracle, or eBureau to scarf up and offer to businesses.¹⁷⁵ But, the question is still posed, if airlines use this same tactic but for security purposes, would it be violating individuals’ privacy?

While airlines are private and not held subject to the Constitution because there is no state action present, the document which is the foundation for this country is an excellent starting point for legal analysis. The Fourth Amendment protects individuals from unreasonable searches in matters where an individual has a subjective expectation of privacy which society would recognize as a legitimate expectation.¹⁷⁶ Courts have held further that the government cannot create or eliminate privacy expectations.¹⁷⁷ Airlines could not merely disclose what they are going to search in order to destroy a customer’s expectation of privacy.¹⁷⁸ However, courts have also held what a “person knowingly exposes to the public, even in his own home or office, is

¹⁷³ Traveling Sardar, *British Caledonian-We Never Forget You Have a Choice*, YOUTUBE (Dec. 12, 2012), <https://www.youtube.com/watch?v=L32diN0xxO4> [<https://perma.cc/YDN7-SCMJ>] (advertising British Caledonian’s slogan “We never forget you have a choice”); *see also* Video Archeology6, *Commercial - British Caledonian Airlines - We Never Forget You Have a Choice. - Caledonian Girls!*, YOUTUBE (June 9, 2014), <https://www.youtube.com/watch?v=pzgEy9WPgrY> [<https://perma.cc/WSH8-R7F4>].

¹⁷⁴ *Data Mining Concepts*, ORACLE: HELP CENTER, https://docs.oracle.com/cd/B28359_01/datamine.111/b28129/process.htm#DMCON002 [<https://perma.cc/8PR7-C7Q9>] (last visited July 8, 2017); Anita Ramasastry, *Lost in Translation? Data Mining, National Security and the “Adverse Inference” Problem*, 22 SANTA CLARA COMPUT. & HIGH TECH. L.J. 757, 767 (2006).

¹⁷⁵ Isaac, *supra* note 38, at 1062; EBUREAU, <http://www.ebureau.com> [<https://perma.cc/7T5D-DJNA>] (last visited July 8, 2017); *Data Management*, LEXISNEXIS RISK SOLUTIONS, <http://www.lexisnexis.com/risk/data-management/> [<https://perma.cc/4SNN-8X9W>] (last visited July 8, 2017); *Data Mining Concepts*, *supra* note 175.

¹⁷⁶ *Katz v. United States*, 389 U.S. 347, 361 (1967) (Harlan, J., concurring).

¹⁷⁷ von Rochow-Leuschner, *supra* note 23, at 157.

¹⁷⁸ *Id.*

not [] subject [to] protection.”¹⁷⁹ Even when an individual gives a third party information “for a limited purpose and [in] confidence,” this information is no longer deemed private.¹⁸⁰ Paradoxically though, in order to function in today’s modern society, divulging personal information is practically mandatory.¹⁸¹

Amazon uses customer data to make recommendations, identify buyer preferences, and improve customer service.¹⁸² American Express and Capital One use data to predict consumer behavior and spending habits, to recognize identity theft, and to retain customers.¹⁸³ Netflix analyzes streaming habit of individuals to recommend programs and determine preferences of entire demographics and even countries.¹⁸⁴ Starbucks determines the success of a potential new store location by assessing traffic, demographics, and consumer data in that location.¹⁸⁵ But big

¹⁷⁹ *Katz*, 389 U.S. at 351; *see also* *Smith v. Maryland*, 442 U.S. 735, 743–44 (1979) (holding “a person has no legitimate expectation of privacy in information he voluntarily turns over to third parties,” and thus there is no expectation of privacy when dialing phone numbers because the number is automatically turned over to phone company for dialing and billing), *partly overruled by statute* 18 U.S.C. § 3121(a); *United States v. Miller*, 425 U.S. 435, 442 (1976) (“checks . . . contain only information voluntarily conveyed . . . in the ordinary course of business”), *subsequent statute fills in gaps of holding does not overrule*, *Quon v. Arch Wireless Operating Co.*, 529 F.3d 892, 905 (9th Cir. 2008) (citing *United States v. Hernandez*, 313 F.3d 1206, 1209–10 (9th Cir. 2002) (“[A]s with the phone numbers they dial, individuals do not enjoy a reasonable expectation of privacy in what they write on the outside of an envelope.”); *United States v. Choate*, 576 F.2d 165, 182 (9th Cir. 1978) (“The information on the outside of envelopes and packages normally passes through so many hands, public and private, that a mail cover cannot be said to invade any constitutionally protected zone of privacy.”), *rev’d on other grounds*, 560 U.S. 746 (2010); *United States v. Springer*, 58 M.J. 164, 168 (C.A.A.F. 2003) (quoting *Ex Parte Jackson*, 96 U.S. 72, 733 (1877)) (“[N]o reasonable expectation of privacy exists in the information visible on the outside of an envelope. ‘Letters and sealed packages are as fully guarded from examination and inspection, *except as to their outward form and weight*, . . .’” (emphasis in original))).

¹⁸⁰ *Miller*, 425 U.S. at 443 (citing *SEC v. Jerry T. O’Brien, Inc.*, 467 U.S. 735, 745 n.15 (citing H.R. Rep. No. 95-1383, p. 34 (1978) (“the purpose of the statute is to fill the gap left by the ruling in *Miller* that a bank customer has ‘no standing under the Constitution to contest Government access to financial records.’”))).

¹⁸¹ *Isaac*, *supra* note 38, at 1083 (citing *Miller*, 425 U.S. at 451).

¹⁸² Ramasastry, *supra* note 175, at 768; Eleanor O’Neill, *10 Companies That Are Using Big Data*, CA TODAY (Sept. 23, 2016), <https://www.icas.com/ca-today-news/10-companies-using-big-data> [<https://perma.cc/XGH7-JZ2M>].

¹⁸³ Ramasastry, *supra* note 175, at 768; O’Neill, *supra* note 183.

¹⁸⁴ Ramasastry, *supra* note 175, at 768; O’Neill, *supra* note 183.

¹⁸⁵ Ramasastry, *supra* note 175, at 768; O’Neill, *supra* note 183; *5 Companies Using Big Data Management to Fuel Their Marketing*, REACHFORCE (Jan. 6, 2016),

data is not just for large corporations. Any website a person visits can pull detailed information about that individual.¹⁸⁶ Private companies have used data for years to exploit consumer impulse.¹⁸⁷ Instead of using data to just “maximize profit and [] improve consumer experience,”¹⁸⁸ airlines can use big data to monitor patterns, behaviors, and purchases to improve aviation safety. Individuals have already disclosed this information to a multitude of companies who are using it, so the information is no longer deemed private under United States law. Plus, airlines are in the unique position to collect their own information from citizens of many countries. A large issue with the CAPPs and TSA Pre-Check programs are other nation’s privacy laws.¹⁸⁹ For example, the European Union has stricter privacy laws than the United States.¹⁹⁰ But with loyalty programs, international credit cards services, and contracts with other travel arrangement companies, air carriers already have a large source of data that is structured around compliance with all other countries’ laws and with the passengers they transport.

Another fear is the accuracy of these data sets. Commercial data, input by humans, may contain errors, which would cause passengers to get flagged without concrete grounds.¹⁹¹ Some have warned even “‘law enforcement data should be used with caution . . . because data may be incomplete or inaccurate.’”¹⁹² However, unlike the government’s programs, the airlines’ security systems would not flag and code passengers as not allowed to fly.¹⁹³ Under the proposed system, a data irregularity simply means a few more questions at the airport and a double screen

<http://www.reachforce.com/blog/5-companies-using-big-data-management-to-fuel-their-marketing/> [<https://perma.cc/8NQ9-49ZT>].

¹⁸⁶ Isaac, *supra* note 38, at 1088–89; *see also* Yoo, *supra* note 67, at 325.

¹⁸⁷ Isaac, *supra* note 38, at 1057–58.

¹⁸⁸ Ramasastry, *supra* note 175, at 758.

¹⁸⁹ Cristina, *supra* note 18, at 628.

¹⁹⁰ *Id.*

¹⁹¹ Ramasastry, *supra* note 175, at 760.

¹⁹² James Fisher, Comment, *What Prices Does Society Have to Pay for Security? A Look at the Aviation Watch Lists*, 44 WILLAMETTE L. REV. 573, 578 (2008) (quoting Al Gore et al., White House Commission on Aviation Safety and Security Final Report to President Clinton 3.19 (Feb. 12, 1997), *available at* <https://fas.org/irp/threat/212fin~1.html> [<https://perma.cc/8BLT-M5TA>]).

¹⁹³ Kite, *supra* note 16, at 1398–99 (noting under the CAPPs II system, passengers who are “[r]ed-coded . . . will be barred from boarding the plane[, and additionally, . . . TSA will hand the names of the red-coded passengers over to appropriate law enforcement officials, thus subjecting the passengers to police questioning and possible arrest.”).

of the passenger's bag. There is no data error under this system that could stop a passenger from traveling without further scrutiny. An additional concern based on faulty or triggering data is its ability to actually alert airlines of a safety concern. Several people have expressed concern that after frequent travelers or terrorists have experienced the system, they can trick the data to bypass and fail to flag them.¹⁹⁴ However, individuals' commercial data is constantly being updated through their own actions.¹⁹⁵ Furthermore, this fails to recognize that people cannot evade detection because the proposed system is two-part. *Every* passenger is subject to questions, dogs walk around *all* bags, and everyone's behavior is monitored and analyzed. Data is just a tool to aid the in-airport check and on board passenger management. Data checks are not a stand-alone, fail proof system but rather a tool in a symbiotic relationship. Moreover, unlike the federal system, which provides no real redress or ways to correct bad information, airlines can add to their own data sets when passengers clear their name. For instance, travelers who get pre-check approval, or have occupations that require rigorous background checks (such a military, law enforcement, teachers, bar admission, etc.), can share the extensive informational findings with airlines, allowing them to further clear the passengers in their security processes.

VI. "SINCERELY YOURS, . . ." ¹⁹⁶: CONCLUSION

Despite all the government does to protect this great nation and aid the airline industry, sadly, it is not enough. Airlines are hemorrhaging money out of safety litigation, disruptive passenger incidents, and terrorist occurrences.¹⁹⁷ The current, jet-

¹⁹⁴ Fisher, *supra* note 193, at 581; Ramasastry, *supra* note 175, at 771.

¹⁹⁵ Jaykishan Panchal, *Stay in the Know: How to Keep Up with Digital Marketing Trends*, BUSINESS.COM (Mar. 1, 2016), <http://www.business.com/online-marketing/how-to-keep-up-with-digital-marketing-trends/> [https://perma.cc/YKE8-QXAS] (noting due to individuals constantly updating and plugging into the digital world through the use of social media, Google connectivity, and more, big data can help businesses stay apprised and continually target customers in the best way possible).

¹⁹⁶ *Aeroflot New Slogan*, AEROFLOT RUSSIAN AIRLINES: NEWS (July 29, 2004), <https://www.aeroflot.ru/ru-en/new/1116> [https://perma.cc/B4GS-QVLG] (announcing Aeroflot's new slogan "Sincerely Yours, Aeroflot").

¹⁹⁷ *Parver v. Jet Blue Airlines Corp.*, 649 F. App'x 539, 541 (9th Cir. 2016).; Dillon, *supra* note 3; Quirk, *supra* note 4; Fontana, *supra* note 6; Bachman, *Still Fighting 9/11 Lawsuits*, *supra* note 121.

lagged security arrangement is not truly protecting anyone.¹⁹⁸ “Above all, [airlines] care,”¹⁹⁹ about their trade and about their passengers. Airlines need to “fly into tomorrow”²⁰⁰ by adopting their own private, data-aided, in-airport security system. “[P]rivatized security and federal screeners have performed as well or as badly as the other,”²⁰¹ but perhaps this is because the industry has adopted the either-or approach. The government and the airlines should adopt systems that work simultaneously for the same objectives, while also allowing separate goals to take priority as well. Let the Transportation Security Administration protect national security, and let airlines protect their industry. Then, in the end, everyone can “fly the friendly skies.”²⁰²

¹⁹⁸ *Parver*, 649 Fed. App’x 539; Dillion, *supra* note 3; Quirk, *supra* note 4; Fontana, *supra* note 6; Bachman, *Still Fighting 9/11 Lawsuits*, *supra* note 121.

¹⁹⁹ Lewis Machipisa, *ZIMBABWE-TRANSPORT: Airline Tries to Clean Up Its Act*, INTER PRESS SERVICE (Jan. 20, 1997), <http://www.ipsnews.net/1997/01/zimbabwe-transport-airline-tries-to-clean-up-its-act/> [<https://perma.cc/NQX8-8827>] (discussing consumer’s spoofs on old slogans of Air Zimbabwe, including their slogan “Above all We Care”).

²⁰⁰ João Marcos Massote, *Japan Airlines - Fly Into Tomorrow*, YOUTUBE (Aug. 9, 2016), <https://www.youtube.com/watch?v=U650zNeCu7s> [<https://perma.cc/A93U-T48L>] (advertising Japan Airlines’ updated fleet with their slogan “Fly Into Tomorrow”).

²⁰¹ Greg Fulton, *An Airport Screener’s Complaint*, TIME (Aug. 17, 2006), <http://content.time.com/time/nation/article/0,8599,1228247,00.html> [<https://perma.cc/4QZ6-ZMGP>].

²⁰² Levere, *supra* note 1; *see also* FriendlySKy, *supra* note 1.

AIR AMBULANCE REFORM – WHY CONGRESS SHOULD EXEMPT AIR AMBULANCES FROM “CARRIER” CLASSIFICATION AND PREEMPTION UNDER THE AIRLINE DEREGULATION ACT

ANDREW J. UPTON*

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I. INTRODUCTION

After an air ambulance transported Ivan Mitchell's wife from Grand Forks, North Dakota to the Mayo Clinic in Rochester, Minnesota, Mr. Mitchell received a bill for about \$54,000.¹ The total bill was \$67,325, but the Mitchells' insurance only covered approximately \$9,000, leaving the Mitchells on the hook for the balance.² After a cluster of cases like the Mitchells' experience, the North Dakota state legislature attempted to regulate the air ambulance industry in an effort to help its citizens afford necessary medical care in times of crisis.³ The North Dakota legislature passed House Bill 1255,⁴ requiring providers of air ambulance services "to become participating providers with certain North Dakota health insurance companies in order to be listed on a 'primary call list' for air ambulance services."⁵ A participating provider would agree to charge only what is allowed in insurance contracts, which would leave patients responsible only for deductibles and any copayments that their policies require.⁶ The intent behind House Bill 1255 was to "prevent patients from getting hit with exorbitant bills from out-of-network⁷ ambulance services."⁸

¹ Patrick Springer, *N.D. Law Test Case for Preventing Air Ambulance Price 'Gouging'*, BISMARCK TRIB. (June 21, 2015), http://bismarcktribune.com/news/state-and-regional/n-d-law-test-case-for-preventing-air-ambulance-price/article_2ad667ea-9fcb-534a-a88d-7225551e56a2.html [https://perma.cc/AH6R-ZUN9].

² *See id.*

³ *See id.*

⁴ H.B. 1255, 64th Leg. Assemb. (N.D. 2015) (codified at N.D. CENT. CODE ANN. § 23-27-04.10 (West 2016)).

⁵ *Valley Med Flight, Inc. v. Dwelle*, 171 F. Supp. 3d 930, 934 (D.N.D. 2016).

⁶ *See Springer, supra* note 1.

⁷ "Out-of-network" versus "in-network" is discussed *infra* Part V., Section B.2.

⁸ *See Springer, supra* note 1.

Like air ambulance providers across the United States, Valley Med Flight, Inc. (Valley Med), an air ambulance provider in North Dakota, is an “air carrier” under the Airline Deregulation Act of 1978 (ADA).⁹ Valley Med filed suit against Terry Dwelle, the State Health Officer for the North Dakota Department of Health, to prevent enforcement of House Bill 1255.¹⁰ Judge Hovland of the United States District Court for the District of North Dakota granted Valley Med’s Motion for Judgment on the Pleadings, holding:

The clear intent of the legislation is to prevent air ambulance service providers, who are not participating providers, from imposing exorbitant fees on patients who wrongly assume their insurance will cover the charges and are not in a position to discover otherwise. This type of consumer protection law is precisely the type of law Congress sought to preempt when it enacted the ADA.¹¹

Judge Hovland based his decision on House Bill 1255’s effect on the prices Valley Med could charge for its services, which created a conflict with the ADA.¹² The ADA reads that “a State . . . may not enact or enforce a law, regulation, or other provision having the force and effect of law related to a *price*, route, or service of an air carrier that may provide air transportation.”¹³ The U.S. Supreme Court has discussed the broad scope of the ADA preemption clause, noting that “the key phrase ‘related to’ expresses a ‘broad pre-emptive purpose.’”¹⁴ That broad preemption means that “state laws and regulations ‘having a connection with or reference to airline rates, routes, or services, are preempted by the ADA.’”¹⁵ Cases like *Valley Med Flight, Inc. v. Dwelle* and experiences similar to that of Ivan Mitchell showcase the precarious position that medical patients can be left in when they require an air ambulance in order to get the treatment they deserve, and their state lawmakers are unable to do anything about it.

While preemption of state law is an oft-discussed topic, little has been written about the specific preemption of air ambu-

⁹ See *Dwelle*, 171 F. Supp. 3d at 934.

¹⁰ See *id.*

¹¹ *Id.* at 942.

¹² See *id.* at 941–42.

¹³ 49 U.S.C. § 41713(b)(1) (2012) (emphasis added).

¹⁴ *Northwest, Inc. v. Ginsberg*, 134 S. Ct. 1422, 1424 (2014) (quoting *Morales v. Trans World Airlines, Inc.*, 504 U.S. 374, 383 (1992)).

¹⁵ *Dwelle*, 171 F. Supp. 3d at 939 (quoting *Morales*, 504 U.S. at 383).

lance regulations under the ADA. Most articles highlight personal experiences of patients transported by air ambulances, with just a passing mention of the ADA or state attempts to regulate the industry. There have also been other articles that discuss pending cases, written before those cases were adjudicated by the courts. One article discusses service preemption under the ADA with respect to food allergies on flights.¹⁶ While this discussion has similar underlying themes with the allergy preemption article, the focuses are different and distinguished enough to provide ample room for comment.

This article discusses the ins and outs of the air ambulance industry, explains the status of air ambulance industry regulatory laws, and details why, in light of judicial precedent and industry practices, Congress should exempt air ambulances from being classified as “carriers” under the ADA, so that state attempts to regulate the air ambulance industry for the protection of their citizens are no longer preempted by a law aimed to promote commercial competition. Part II traces the development of the air ambulance industry from its wartime start to the present day. Part III discusses briefly the different ways in which an air ambulance provider receives payment for its services, as a means of providing background for the impetus behind the state attempts discussed in Part IV. Part IV lays out the legal framework for ADA preemption based on Supreme Court precedent and developments in lower courts related to attempts by states to circumvent the ADA. Part V explains why, given legislative intent, industry practices, and judicial precedent, exempting air ambulances from the ADA is the logical move.

II. DEVELOPMENT OF THE AIR AMBULANCE INDUSTRY

The carnage that accompanied World War I brought with it a new innovation: the first instance of an aircraft transporting medical patients when “an open cockpit biplane was used to rescue injured soldiers and bring them to field hospitals.”¹⁷ Fast forward nearly sixty years, and the first non-military dedicated air ambulances began flying across the skies.¹⁸ An “air ambu-

¹⁶ See Laci Verduco Resendiz, Comment, *Food Allergies on Flights—How A Narrow Interpretation of “Service” Preemption Under the Airline Deregulation Act Could Give Allergic Passengers Much Needed Protection*, 81 J. AIR L. & COM. 321 (2016).

¹⁷ Todd Lovshin, *Air Ambulance Providers: Providers’ Refusal to Contract with Insurers Costing Many Montanans Thousands*, 41 MONT. LAWYER 32 (2016).

¹⁸ See *id.* (stating that “[i]n 1973 the first civil airplanes dedicated to emergency medical services began operations”).

lance” is exactly what it sounds like: helicopters or planes that transport patients (and in some cases, donated organs) to and from the hospital or scene of an accident.¹⁹ Air ambulances are more than just aircraft designated specifically for transporting medical patients; they are also “equipped with state-of-the-art medical equipment and staffed by paramedics, emergency medical technicians and sometimes doctors and nurses.”²⁰ This equipment allows air ambulances to effectively transport “patients with time critical injuries and conditions to medical facilities” as well as “provid[e] patients with advanced care while en route.”²¹ The advanced technology and qualified medical personnel onboard the ambulances has led to the widely-held belief that air ambulances “improve the chances of survival for trauma victims and other critical patients,”²² such as those with “pregnancy complications, heart attacks, strokes and respiratory diseases.”²³ As of 2014, more than 550,000 patients per year are transported via air ambulances,²⁴ a number that has grown over the years.²⁵ The increasing usage of air ambulances has pushed the regulation issue to the forefront and necessitates action.

III. PAYING FOR AIR AMBULANCE SERVICES IS COMPLICATED

By their nature, medical services are expensive, and paying for them can be complicated and involve multiple sources. The average distance covered by an air ambulance trip is fifty-two miles, and will cost between \$12,000 to \$25,000 per flight, before insurance kicks in.²⁶ Air ambulance providers garner pay-

¹⁹ U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-09-627T, AVIATION SAFETY: POTENTIAL STRATEGIES TO ADDRESS AIR AMBULANCE SAFETY CONCERNS 1 (2009).

²⁰ *Consumer Alert: Understanding Air Ambulance Insurance*, NAT'L ASS'N. OF INS. COMM'RS (Apr. 2., 2014), http://www.naic.org/documents/consumer_alert_understanding_air_ambulance_insurance.htm [<https://perma.cc/DR3K-PXK5>].

²¹ U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-10-907, AIR AMBULANCE: EFFECTS OF INDUSTRY CHANGES ON SERVICES ARE UNCLEAR 3 (2010) [hereinafter GAO-10-907].

²² *Id.*

²³ *Consumer Alert: Understanding Air Ambulance Insurance*, *supra* note 20.

²⁴ *Id.*

²⁵ See GAO-10-907, at 3 (stating that “[a]ir ambulances transported more than 270,000 patients in 2008”).

²⁶ *DIFS Consumer Counselor Insurance Information Sheet: Understanding Coverage for Air Ambulance Services*, MICH. DEP'T INS. & FIN. SERVS. (July 2015), https://www.michigan.gov/documents/difs/Air_Ambulance_Insurance_482626_7.pdf [<https://perma.cc/KHF5-JGVX>]; see also *Consumer Alert: Understanding Air Ambulance Insurance*, *supra* note 20.

ment for their services in several ways, including, among others, Medicare, private health insurance, and the patient himself.²⁷

“Medicare is the principal government program that helps pay for healthcare furnished by nongovernment providers.”²⁸ There are a number of ways that an individual can qualify for Medicare coverage. A person can “automatically qualify for Medicare Part A” upon reaching the age of sixty-five.²⁹ Those who qualify for Part A coverage “are automatically enrolled in Part B when they become eligible for Part A unless they opt out.”³⁰ Some individuals who do not qualify for Medicare coverage on their own have the ability to purchase coverage.³¹ Additionally, some “state Medicaid programs . . . buy Medicare coverage for low-income individuals . . .”³² Ambulance services, if covered, fall under Medicare Part B.³³

Medicare *may* cover transportation by air ambulance if the patient’s condition necessitates ambulance transport that cannot be accommodated by ground ambulance and one of the following conditions applies: either (1) ground transport cannot easily reach the patient’s pickup location; or (2) distance or obstacles could interfere with ground transportation efforts and prevent the patient from getting care quickly.³⁴ Transport by air ambulance is also “limited to taking the patient to the nearest appropriate facility.”³⁵ While not listed explicitly under the details of air ambulance coverage, the Medicare website does include a caveat to the section on “emergency ambulance transportation”—“Medicare coverage depends on the seriousness of your medical condition and whether you could’ve been safely transported by other means.”³⁶ This caveat serves as a yellow flag for Medicare patients, as the website does not state explicitly that Medicare *will* “pay for emergency ambulance transportation in

²⁷ See GAO-10-907, at 5 fig.1 (reproduced *infra* Figure 1).

²⁸ TERRY S. COLEMAN, MEDICARE LAW 1 (2001).

²⁹ See *id.* at 2 (“Individuals age sixty-five or over who qualify for Social Security or Railroad Retirement monthly cash retirement benefits automatically qualify for Medicare Part A.”).

³⁰ *Id.* at 3.

³¹ See *id.*

³² *Id.* at 4.

³³ See *id.* at 20 (“§ 2:2 The Part B Benefits Package”), 34 (“§ 2:2(f)(1) Ambulance”).

³⁴ See U.S. CENTERS FOR MEDICARE & MEDICAID SERVS., *Your Medicare Coverage, Ambulance Services*, <https://www.medicare.gov/coverage/ambulance-services.html> [<https://perma.cc/6VH8-JLXB>] (last visited July 7, 2017).

³⁵ COLEMAN, *supra* note 28, at 35.

³⁶ *Your Medicare Coverage, Ambulance Services*, *supra* note 34.

an airplane or helicopter,” but rather that “Medicare *may* pay for emergency ambulance transportation in an airplane or helicopter”³⁷ That small difference in wording, combined with the caveat, will force patients in critical situations to utilize whatever forms of emergency medical transport they can get, and hope that Medicare will provide coverage. Nevertheless, patients ultimately will not know for sure if they are covered until after the fact.

For those who are not enrolled in Medicare, their use of air ambulances may be covered in whole or in part by their private insurance, and if they do not have applicable insurance, the entire cost will come out-of-pocket.³⁸ “Balance billing” is when a provider of medical services bills the patient for the “difference between the provider’s charges and the amount” covered by insurance, or covered by an organization’s fee schedule.³⁹ “For example, if the provider’s charge is \$100 and the allowed amount is \$70, the provider may bill [the patient] for the remaining \$30.”⁴⁰

Figure 1, below, illustrates the many sources from which air ambulance providers collect payment in order to satisfy a patient’s bill.

³⁷ *Id.* (emphasis added).

³⁸ See Steve Jordon, *Few Think About Insurance When Air Ambulance Lifts Off; Then . . . Surprise*, OMAHA WORLD HERALD (Nov. 24, 2014), http://www.omaha.com/money/few-think-about-insurance-when-air-ambulance-lifts-off-then/article_11759ecf-182f-59a2-8cde-7c804ecf9913.html [<https://perma.cc/CX4B-ACJG>] (Nebraska’s insurance director saying that some individuals “have found that there’s a huge balance to pay even after their health insurance pays.”).

³⁹ *Valley Med Flight, Inc. v. Dwelle*, 171 F. Supp. 3d 930, 937 (D.N.D. 2016); see also *Balance Billing*, HEALTHCARE.GOV GLOSSARY, <https://www.healthcare.gov/glossary/balance-billing/> [<https://perma.cc/HB3X-GQJZ>] (last visited July 7, 2017).

⁴⁰ *Balance Billing*, *supra* note 39.

Figure 1: Percentage of Payments for Air Ambulance Transports Received from Different Sources⁴¹

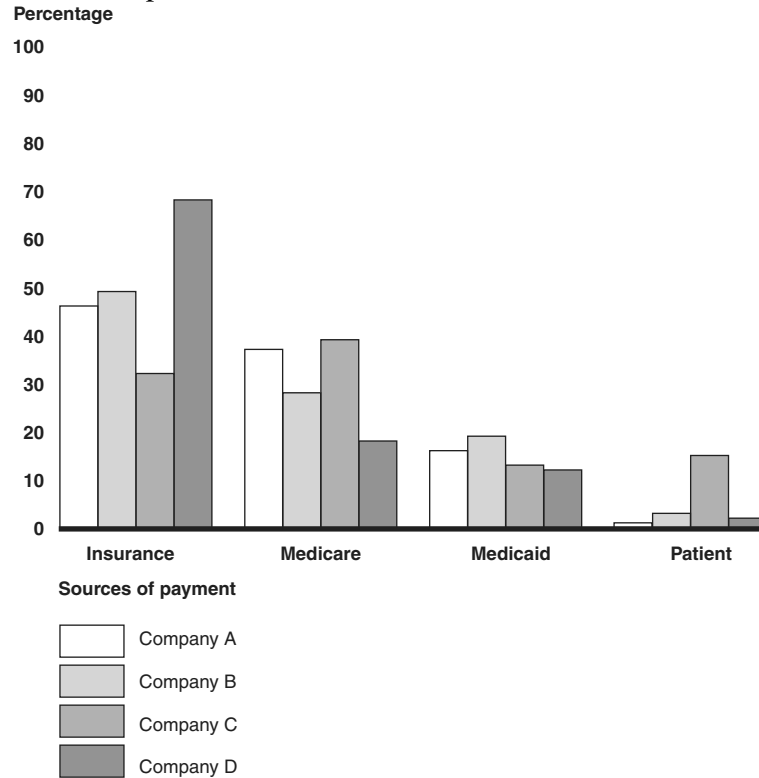


Figure 1 shows the percentage of payment received by four air ambulance providers from each of four sources: private insurance, Medicare, Medicaid, and from the patient himself (which would be the amount that was “balance billed” after the other sources made their contributions). Figure 1 shows the unique nature of each air ambulance transport, and how each source of payment does not necessarily contribute the same amount or percentage in every patient’s case.

IV. WHAT IS THE LEGAL FRAMEWORK FOR PREEMPTION UNDER THE AIRLINE DEREGULATION ACT?

As *Valley Med Flight, Inc. v. Dwelle* illustrates, states at first glance appear to have little to no options for regulating⁴² the

⁴¹ GAO-10-907, at 5 fig.1.

⁴² For purposes of this discussion, unless otherwise noted, any mention of regulating the air ambulance industry refers to regulating the prices and rates associated with air ambulance services, as states are free to regulate other aspects of the

costs associated with the air ambulance industry on their own due to the ADA.⁴³ As the following sections discuss, state regulation of air ambulance costs unfortunately appears to be nearly impossible at this time. There may be a glimmer of hope for states wanting to do something to help their citizens, but it is not without its own potential legal hurdles to conquer when the time comes.⁴⁴

A. THE SUPREMACY CLAUSE AND THE ADA EXPRESSLY PREEMPT
STATE REGULATION OF THE AIR AMBULANCE INDUSTRY,
BECAUSE AIR AMBULANCES ARE “CARRIERS”

Preemption of state law is possible because of the Supremacy Clause,⁴⁵ which “invalidates state laws that interfere with, or are contrary to, federal law.”⁴⁶ In 1978, Congress came to the conclusion that “deregulation of the airline industry would lead to greater reliance on market forces resulting in greater efficiency, innovation, lower prices, and enhanced quality and variety of air transportation services,” and passed the ADA.⁴⁷ The ADA dictates that “a State . . . may not enact or enforce a law, regulation, or other provision having the force and effect of law related to a *price*, route, or service of an air carrier that may provide air transportation.”⁴⁸ The ADA therefore has an express preemption clause, meaning that Congress has explicitly stated that the ADA preempts state law.⁴⁹

Specifically, the ADA is concerned with “air carrier[s].”⁵⁰ While the ADA is silent as what constitutes an “air carrier,”⁵¹ Title 49 defines the term as “a citizen of the United States undertaking by any means, directly or indirectly, to provide air transportation.”⁵² “As a general rule an air carrier is a common carrier”⁵³ Title 49 supports this statement, referencing “air-

industry. See GAO-10-907, at 23, 37; Lovshin, *supra* note 17, at 34 (“states do have limited regulatory authority over air ambulance providers around medical and quality standards of care”).

⁴³ See *Dwelle*, 171 F. Supp. 3d at 941–42.

⁴⁴ See *infra* Part V., Section B.3.

⁴⁵ U.S. CONST. art. VI, cl. 2.

⁴⁶ *Dwelle*, 171 F. Supp. 3d at 938 (internal quotations omitted).

⁴⁷ *Id.* (citing *Morales v. Trans World Airlines, Inc.*, 504 U.S. 374, 383 (1992)).

⁴⁸ 49 U.S.C. § 41713(b)(1) (2012) (emphasis added).

⁴⁹ See *Dwelle*, 171 F. Supp. 3d at 938.

⁵⁰ See 49 U.S.C. § 41713(b)(1).

⁵¹ See *id.*

⁵² 49 U.S.C. § 40102(a)(2) (2012).

⁵³ THOMAS A. DICKERSON, TRAVEL LAW § 2.05 (2016).

craft [acting] as a common carrier for compensation.”⁵⁴ While that statute does not define the term, “it has been said that a common carrier . . . holds [itself] out to the public as engaged in the business of transporting persons or property from place to place, for compensation, offering [its] services to the public generally.”⁵⁵ “The public, however, does not mean everybody all the time.”⁵⁶ It is irrelevant whether the entire population will utilize the service, or whether it is a specialized service like air ambulances.⁵⁷ Therefore, air ambulances are considered to be carriers under federal legislation.⁵⁸

B. SUPREME COURT PRECEDENT

The U.S. Supreme Court has weighed in on how the ADA’s express preemption clause should be construed in three cases.⁵⁹ The Supreme Court first took up the issue of the scope of ADA preemption in *Morales v. Trans World Airlines, Inc.*⁶⁰ In *Morales*, the Supreme Court explained that the broad applicability of the ADA’s preemption language prevents states from enforcing legislation “relating to rates, routes, or services of any air carrier”⁶¹ The Court found that the key words “relating to” have a broad plain language meaning, which in turn gives rise to “a broad pre-emptive purpose.”⁶² The Court rejected the argument that the ADA only preempts state laws that “actually prescrib[e] rates, routes, or services” because such an interpretation would have the effect of eliminating the words “relating to” from the ADA.⁶³ That effect would go against the Court’s own rules of

⁵⁴ See 49 U.S.C. § 40102(a)(25).

⁵⁵ D. E. Buckner, Annotation, *Air Carrier as Common or Private Carrier, and Resulting Duties as to Passenger’s Safety*, 73 A.L.R. 2d 346 (1960) (internal quotations omitted).

⁵⁶ *Med-Trans Corp. v. Benton*, 581 F. Supp. 2d 721, 733 (E.D.N.C. 2008) (quoting *Terminal Taxicab Co. v. Kutz*, 241 U.S. 252, 255 (1916)) (internal citations omitted).

⁵⁷ See *id.*

⁵⁸ See *id.* at 732; *Valley Med Flight, Inc. v. Dwelle*, 171 F. Supp. 3d 930, 933 (D.N.D. 2016).

⁵⁹ See *Northwest, Inc. v. Ginsberg*, 134 S. Ct. 1422 (2014); *Am. Airlines, Inc. v. Wolens*, 513 U.S. 219 (1995); *Morales v. Trans World Airlines, Inc.*, 504 U.S. 374 (1992).

⁶⁰ *Morales*, 504 U.S. 374.

⁶¹ *Id.* at 383 (emphasis added) (internal quotations omitted).

⁶² *Id.*

⁶³ *Id.* at 385.

construction.⁶⁴ The Court expressed its findings simply: “State enforcement actions having a connection with or reference to airline rates, routes, or services are pre-empted” by the ADA.⁶⁵

The Supreme Court next considered the scope of ADA preemption in *American Airlines, Inc. v. Wolens*.⁶⁶ The statute at issue in *Wolens*, the Illinois Consumer Fraud Act,

declare[d] unlawful “[u]nfair methods of competition and unfair or deceptive acts or practices, including but not limited to the use or employment of any deception, fraud, false pretense, false promise, misrepresentation or the concealment, suppression or omission of any material fact, with intent that others rely upon [it] . . . in the conduct of any trade or commerce . . . whether any person has in fact been misled, deceived or damaged thereby.”⁶⁷

The Court found that Illinois’ Consumer Fraud Act was “pre-scriptive; it controls the primary conduct of those falling within its governance” and “serves as a means to guide and police the marketing practices of the airlines”⁶⁸ The Court held that the ADA preempted claims under the Consumer Fraud Act because the purpose behind the ADA was to “to leave largely to the airlines themselves, and not at all to States, the selection and design of marketing mechanisms appropriate to the furnishing of air transportation services”⁶⁹ The Court agreed with American Airlines that “Congress could hardly have intended to allow the States to hobble [competition for airline passengers] through the application of restrictive state laws,”⁷⁰ when promotion of “competitive market forces” underlies the ADA itself.⁷¹ A stable and efficient market depends on enforcing freedom of contract ideals, a reality that “is key to sensible construction of the ADA.”⁷²

⁶⁴ *Id.* at 383 (“The question . . . is one of statutory intent, and we accordingly begin with the language employed by Congress and the assumption that the ordinary meaning of that language accurately expresses the legislative purpose.” (internal quotations omitted)).

⁶⁵ *Id.* at 384 (internal quotations omitted).

⁶⁶ 513 U.S. 219, 221–22 (1995).

⁶⁷ *Id.* at 227 (citing ILL. COMP. STAT., ch. 815, § 505/2(1992) (formerly codified at ILL. REV. STAT., ch. 121 1/2, 262 (1991))).

⁶⁸ *Id.* at 227–28.

⁶⁹ *Id.* at 228.

⁷⁰ *Id.* (alteration in original) (quoting Brief for Petitioner at 27, *Wolens*, 513 U.S. 219 (No. 93-1286)).

⁷¹ *Id.* at 230.

⁷² *Id.*

Finally, the Supreme Court again considered the broad preemptive range of the ADA in *Northwest, Inc. v. Ginsberg*.⁷³ The Court had “little difficulty rejecting” the argument that ADA preemption only applies to laws enacted by state legislatures and to state administrative agency regulations, and not to common law developments.⁷⁴ The ADA preempts state “‘law[s], regulation[s], or other provision[s] having the force and effect of law,’”⁷⁵ and the Court noted that it is normal practice to refer to common law developments as “provisions.”⁷⁶ Further, the Court noted that common law developments have “the force and effect of law” that the ADA prohibits.⁷⁷ The Court elaborated, pointing out that the central purpose of the ADA would not be served by exempting common law rules or developments from its purview.⁷⁸ In the eyes of the Court, exempting common law rules would provide the states with a way to undo the deregulation intended by the ADA.⁷⁹ The effect of exempting common law rules from ADA preemption would therefore allow some modicum of state regulation of prices, routes, and/or services, rather than allowing the forces of the free market to dictate prices, routes, and services.⁸⁰ The Court recognized this, and stated the importance of “the effect of a state law, regulation, or provision, not its form[:] . . . [T]he ADA’s deregulatory aim can be undermined just as surely by a state common-law rule as it can by a state statute or regulation.”⁸¹

These three Supreme Court cases explored the broad scope of ADA preemption.⁸² Are there any niches left unmapped? As the next section discusses, states have tried to find where the line is drawn in order to avoid preemption, yet still exert some facet of control over the air ambulance industry.

C. ATTEMPTS TO CHANGE HAVE MIXED RESULTS

Lawmakers at both the state and federal level have attempted to effectuate change in terms of state regulation of the air ambu-

⁷³ 134 S. Ct. 1422 (2014).

⁷⁴ *See id.* at 1429.

⁷⁵ *Id.* (alterations in original) (quoting 49 U.S.C. § 41713(b)(1)).

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ *Id.* at 1430.

⁷⁹ *See id.*

⁸⁰ *See id.*

⁸¹ *Id.*

⁸² *See id.* at 1428–29.

lance industry. Unfortunately, these attempts have mostly been met with precedent-deferential courts or a lack of information, both leading to the same result: disallowance of state regulations of the air ambulance industry, with one exception.⁸³

1. *State Level*⁸⁴

Several states have attempted to regulate the air ambulance industry in some way, shape, or form, and seemingly each attempt to regulate is met with resistance by the courts. While the most common attempt comes via statutory enactment passed by the state legislature, there are subtle nuances between the approaches, and some attempts eschew the legislature altogether and come from the administrative side. Further, Montana has passed a statute that does not seek to regulate the air ambulance industry, but gives incentives for air ambulance providers to make their services more affordable to Montana residents.⁸⁵

a. North Dakota

North Dakota lawmakers passed a law that gave the North Dakota Department of Health the authority to create a “primary call list” of air ambulance providers.⁸⁶ The statute required that for an air ambulance provider to qualify for inclusion on the primary call list, the provider must become “a participating provider of the health insurance carriers in the state which collectively hold at least seventy-five percent of the health insurance coverage in the state as determined by annual market share reports.”⁸⁷ A participating provider agrees to charge only what is allowed in the insurance contracts of the carriers the provider joins, which would leave patients responsible only for deductibles and any copayments that their policies require.⁸⁸

The statute also laid out a protocol for emergency medical services personnel to follow when arranging for an air ambulance:

⁸³ See *infra* Part IV., Section C.1.f.

⁸⁴ This discussion is not meant to be an exclusive or exhaustive list of every state attempt at air ambulance regulation. There may be other states that have attempted regulation, but the states included herein are the prominent examples.

⁸⁵ MONT. CODE ANN. § 50-6-320 (West 2015).

⁸⁶ N.D. CENT. CODE ANN. § 23-27-04.10(1) (West 2016).

⁸⁷ § 23-27-04.10(2).

⁸⁸ See Springer, *supra* note 1.

(1) First, the recipient of the request shall call an air ambulance service provider listed on the primary call list which is within the designated response zone.

(2) Second, if each of the air ambulance service providers listed on the primary list is not available or is not able and willing to respond to the call, the recipient of the request shall notify the requester of this fact and shall call an air ambulance provider listed on the secondary call list within the designated response zone.

(3) Third, if each of the air ambulance service providers listed on the secondary list is not available or is not able and willing to respond to the call, the recipient of the request shall notify the requester of this fact and shall inform the requester of primary and secondary air ambulance service provider options outside the designated response zone.⁸⁹

This protocol leads to medical personnel targeting participating providers first, and means medical personnel can contact providers on the secondary list only when the entirety of the primary list has turned down the call.⁹⁰ The statute throws another wrinkle at air ambulance providers, as it instructs the Department of Health to “establish air ambulance service response zones . . . based on response times and patient health and safety.”⁹¹ Providers who are outside the response zone organized by the Department of Health become the tertiary option.⁹²

This protocol and the participating provider mandate prompted Valley Med Flight, Inc. to file suit seeking to prevent North Dakota from enforcing the statute.⁹³ In North Dakota, the carrier Blue Cross Blue Shield controls a majority of the health insurance market.⁹⁴ Therefore, in order to comply with the North Dakota statute, an air ambulance provider wanting to operate in North Dakota “must become a participating provider with [Blue Cross Blue Shield] in order to be listed on the primary call list.”⁹⁵ This meant that in order for Valley Med to get on the primary call list, it had to agree with Blue Cross Blue Shield on reimbursement rates.⁹⁶ However, the forced agree-

⁸⁹ § 23-27-04.10(4)(b).

⁹⁰ § 23-27-04.10(4)(b)(2).

⁹¹ § 23-27-04.10(4).

⁹² § 23-27-04.10(4)(b)(3).

⁹³ See *Valley Med Flight, Inc. v. Dwelle*, 171 F. Supp. 3d 930, 934 (D.N.D. 2016).

⁹⁴ See *id.* at 936 (“Blue Cross Blue Shield of North Dakota (“BCBS”) controls more than 50% of the health insurance market in North Dakota.”).

⁹⁵ *Id.*

⁹⁶ See *id.* at 936–37.

ment led to Valley Med accepting reimbursement rates with Blue Cross Blue Shield that were “substantially below the market rate,” so much so that it would be unable to continue operating if it had to accept these rates.⁹⁷

While North Dakota argued that providers make “a business decision” when they choose to become participating providers, the United States District Court for the District of North Dakota ruled that when that is the only choice other than discontinuing operations, it is no choice at all.⁹⁸ Participating providers on the primary call list have a “competitive advantage” over providers on the secondary call list.⁹⁹ That competitive advantage means that participating providers will receive more calls, while providers on the secondary list are only contacted when the entire primary list refuses the call. This severely restricts the ability of providers to offer their services.¹⁰⁰ The court held that North Dakota interfered with the market participation of air ambulance providers, which “is precisely the type of state regulation Congress sought to prevent when it included an express preemption clause in the ADA.”¹⁰¹

The District Court went even further, finding that the North Dakota statute was preempted on pricing grounds as well.¹⁰² The court said that the North Dakota statute indirectly impacted the prices charged by air ambulance providers by forcing them to accept the reimbursement rates of carriers in order to become participating providers.¹⁰³ While the statute’s plain language did not restrict the rates an air ambulance provider could charge, *Ginsberg* instructed the court that the effect, rather than the form, of a state law is what is important when analyzing preemption.¹⁰⁴

b. North Carolina

A North Carolina statute stated, “[n]o person shall offer or develop a new institutional health service without first obtaining

⁹⁷ *Id.* at 937.

⁹⁸ *See id.* at 941.

⁹⁹ *Id.*

¹⁰⁰ *See id.*

¹⁰¹ *Id.*

¹⁰² *See id.* at 941–42.

¹⁰³ *See id.* (“There can be little question Section 23-27-04.10 effects [sic] Valley Med’s prices and thus relates to price under the ADA.”).

¹⁰⁴ *See id.* at 941 (citing *Northwest, Inc. v. Ginsberg*, 134 S. Ct. 1422, 1430 (2014)).

a certificate of need from the Department”¹⁰⁵ “New institutional health service[]” is defined to include air ambulances.¹⁰⁶ The United States District Court for the Eastern District of North Carolina held that the purposes behind requiring a certificate of need “directly contravene the pro-competition purposes underlying the ADA.”¹⁰⁷ The court held that because the North Carolina statute prescribed behavior that was necessary for an air ambulance provider to operate within the state, it was related to price, route, or service under the ADA and thus preempted.¹⁰⁸ The statute substituted the commands of the government for the market forces that justify the ADA.¹⁰⁹

c. Wyoming

Wyoming Statute Section 27-14-401(e) dictated that “[i]f transportation by ambulance is necessary, the division shall allow a reasonable charge for the ambulance service at a rate not in excess of the rate schedule established by the director under the procedure set forth for payment of medical and hospital care.”¹¹⁰ The fee schedule adopted for air ambulance providers set maximum allowable reimbursement rates.¹¹¹ While air ambulance providers would submit bills to the Worker’s Compensation Division in excess of the maximum rate allowed under the fee schedule, the Division would only pay the amounts allowed.¹¹² Under the Wyoming statute, “ambulance services are not considered ‘medical and hospital care,’” so air ambulance providers are not allowed to balance bill injured workers who use their services.¹¹³ This statutory limit restricts the amount that air ambulance providers can receive in exchange for their ser-

¹⁰⁵ N.C. GEN. STAT. ANN. § 131E-178(a) (West 2016) (effective July 5, 2007).

¹⁰⁶ N.C. GEN. STAT. ANN. § 131E-176(16)(f1)(1) (West 2005) (effective to June 18, 2009) (note that this provision is still present in the current codification of the statute).

¹⁰⁷ *Med-Trans Corp. v. Benton*, 581 F. Supp. 2d 721, 736 (E.D.N.C. 2008).

¹⁰⁸ *See id.*

¹⁰⁹ *See id.*

¹¹⁰ WYO. STAT. ANN. § 27-14-401(e) (West 2016).

¹¹¹ *EagleMed, LLC v. Wyoming*, No. 15-CV-26-ABJ, slip op. at 3 (D. Wy. May 16, 2016) (found at <http://leg.mt.gov/content/Committees/Interim/2015-2016/Economic-Affairs/Committee-Topics/Ambulance/WYwork-comp-court-case5-16.pdf> [<https://perma.cc/UUZ8-NYJR>]).

¹¹² *Id.*, slip op. at 3–4.

¹¹³ *Id.*, slip op. at 25.

vices, setting up a collision course with ADA preemption.¹¹⁴ The United States District Court for the District of Wyoming found that by restricting balance billing, the statute was dictating the maximum rate that air ambulance providers operating within Wyoming could charge for their services, and held that such rate restrictions were preempted by the ADA.¹¹⁵

d. Minnesota

In *Hiawatha Aviation of Rochester, Inc. v. Minnesota Department of Health*,¹¹⁶ the State Commissioner of the Department of Health denied a provider's application to operate an air ambulance service in Minnesota. Based on a predecessor to the ADA, the Supreme Court of Minnesota ruled that the state, and by extension, the Commissioner of the Department of Health, was "preempted from controlling entry into the field of air ambulance service" ¹¹⁷ However, the state supreme court also noted that this ruling did not "oust the state from its traditional role in the delivery of medical services-the [sic] regulation of staffing requirements, the qualifications of personnel, equipment requirements, and the promulgation of standards for maintenance of sanitary conditions."¹¹⁸

e. Florida

In Florida, following a fatal motorcycle accident, a plaintiff's estate sought declaratory judgment that the billing practices of an air ambulance provider violated state statutes related to personal injury protection.¹¹⁹ The United States District Court for the Southern District of Florida held that there was only one way to view the plaintiff's claims: as challenging the rates of the air ambulance provider for its services.¹²⁰ The court said that allowing the claims to proceed "would naturally affect the provision of [the provider's] services in addition to the prices of and

¹¹⁴ *Id.*, slip op. at 30 ("Because the air ambulances cannot collect above the amount the defendants have set in their fee schedules, the statute and regulations are directly related to air carrier prices.").

¹¹⁵ *Id.*, slip op. at 33.

¹¹⁶ 389 N.W.2d 507, 508 (Minn. 1986).

¹¹⁷ *Id.* at 509.

¹¹⁸ *Id.*

¹¹⁹ *Bailey v. Rocky Mountain Holdings, LLC*, 136 F. Supp. 3d 1376, 1378–79 (S.D. Fla. 2015).

¹²⁰ *See id.* at 1382.

payment for those services.”¹²¹ This led the court to view the Plaintiff’s claims as an enforcement action under state law.¹²² Such actions are “expressly disallowed by the ADA’s express preemption provision, which intentionally leaves the price of such services to the competitive market.”¹²³

f. Colorado

The Colorado example is different from the other state examples discussed above. Colorado’s statute required all air ambulance providers be licensed to operate in the state, and that the provider must complete an accreditation process by the commission on accreditation of medical transport systems.¹²⁴ Eagle Air Med Corporation, an air ambulance provider, filed suit alleging that the Colorado statute was preempted by the ADA and seeking a declaratory judgment.¹²⁵ The defendants moved to stay the action.¹²⁶ The United States District Court for the District of Colorado noted that the Supreme Court has previously said that “only those state laws having a ‘*significant effect*’ or a ‘*significant impact*’ on the prices, routes, or services, of an air carrier were preempted under the ADA.”¹²⁷ The Colorado court construed the *Morales* language as indicating that the scope of ADA preemption was narrower than the statute suggests.¹²⁸ The Colorado court held “that the ADA’s preclusion of state regulation of carrier ‘price, route, or service’ [did not] conclusively equate[] to state regulation” of air ambulances.¹²⁹ Therefore, the court declined to issue a declaratory judgment and granted the defendants’ motion to stay the action.¹³⁰ In other words, the Colorado court found that ADA preclusion might not be as broad as the Supreme Court suggested in *Morales*, and since the Colorado statute did not outright have a significant effect or impact on the prices, routes, or services provided by Eagle Air Med Corpo-

¹²¹ *Id.*

¹²² *Id.*

¹²³ *Id.*

¹²⁴ COLO. REV. STAT. ANN. § 25-3.5-307(1)(a) (West 2007) (effective to May 31, 2016).

¹²⁵ Eagle Air Med Corp. v. Colorado Bd. of Health, 570 F. Supp. 2d 1289, 1290 (D. Colo. 2008).

¹²⁶ *Id.*

¹²⁷ *Id.* at 1292 (citing *Morales v. Trans World Airlines, Inc.*, 504 U.S. 374, 388, 390 (1992)).

¹²⁸ *Id.*

¹²⁹ *Id.* at 1293.

¹³⁰ *Id.* at 1295.

ration, the ADA did not clearly preempt the Colorado statute at the time of the filing.¹³¹ Since *Eagle Air Med Corp. v. Colorado Board of Health*, the Colorado legislature has subsequently amended Section 25-3.5-307.¹³² The current statute simplifies the accreditation language, removing the commission on accreditation of medical transport systems language, and adding generic references to a department-approved accrediting organization and compliance with rules set by the board.¹³³

g. Montana

Seeing “a need to assist Montana consumers with regard to the availability and affordability of air ambulance service[s],”¹³⁴ the Montana Legislature passed a law exempting air ambulance providers from insurance statutes.¹³⁵ Unlike some of the legislation passed by other states discussed in this section, Montana’s statute does not attempt to regulate the air ambulance industry, but rather seeks to entice air ambulance providers to create membership programs that will make air ambulance services more affordable.¹³⁶ A concern¹³⁷ with air ambulance membership programs is, as Mr. Lovshin states: “You are covered only if that company is the one to transport you. . . . If a different company (of the 14 currently operating in Montana) provides the service, you have no coverage.”¹³⁸ However, Mr. Lovshin is incorrect, at least in terms of the Montana statute. Section 50-6-320(3) of the Montana Health and Safety Code states: “Any private air ambulance service membership program must have arrangements with other air ambulance service providers in Montana to the extent reasonably possible to ensure maximum geographic coverage within the state for the subscribers to the

¹³¹ *Id.* at 1292–93 (“There remains at least a question whether the subject Colorado statute and regulations, which specifically relate only to emergency medical air transport, frustrate these objectives or any other objective of the ADA. This certainly must be taken into account in determining whether it is ‘facially conclusive’ that Colorado’s statute and regulations are preempted by 49 U.S.C. § 41713(b)(1).”).

¹³² See 2016 Colo. Legis. Serv. ch. 206 (H.B. 16-1280) (West).

¹³³ See *id.*; COLO. REV. STAT. ANN. § 25-3.5-307(1)(a) (West 2016).

¹³⁴ MONT. CODE ANN. § 50-6-320(1) (West 2015).

¹³⁵ See *id.*; Lovshin, *supra* note 17, at 32.

¹³⁶ MONT. CODE ANN. § 50-6-320(2) (West 2015).

¹³⁷ For a detailed discussion of membership program concerns and how they work, see *infra* Part V., Section B.3.

¹³⁸ Lovshin, *supra* note 17.

program.”¹³⁹ Unlike what Mr. Lovshin contends, a subscriber is not covered only when the provider he or she subscribes to is the one to transport the subscriber. Section 50-6-320(3) actually requires air ambulance providers who take advantage of the exemption to work with other air ambulance providers to ensure their programs are transferrable amongst providers for the benefit of subscribers.¹⁴⁰ While not necessarily immune to potential legal challenges, this Montana statute appears to present a template that other states may be able to use to assist their citizens in making air ambulance services more affordable.¹⁴¹

2. Federal Level

State governments are not the only legislative bodies making efforts to regulate the air ambulance industry; there are some members of Congress who have recognized the importance of the issue and have made an effort to attempt to return some power back to the states. Coincidentally (or maybe not so), the two senators at the forefront of the congressional effort are from states that have already attempted to pass their own legislation regulating the air ambulance industry: Senator Jon Tester from Montana¹⁴² and Senator John Hoeven from North Dakota.¹⁴³ Senator Tester and Senator Hoeven became the first members of Congress to attempt to reclaim air ambulance regulation for the states when they introduced Senate Amendment 3753.¹⁴⁴

Amendment 3753, titled “State Prioritization of Dispatch of Air Ambulance Service Providers,” sought to grant states the power to pass legislation “that creates a primary and secondary call list of air ambulance service providers in the State for distribution to emergency response entities and personnel to prioritize the dispatch of air ambulance serve [sic] providers,” notwithstanding the ADA.¹⁴⁵ On April 13, 2016, Senators Tester and Hoeven introduced this proposed amendment less than a month after the United States District Court for the District of

¹³⁹ MONT. CODE ANN. § 50-6-320(3) (West 2015).

¹⁴⁰ *See id.*

¹⁴¹ *See infra* Part V., Section B.3.

¹⁴² *See Biography*, JON TESTER, U.S. SENATOR FOR MONTANA, <http://www.testersenate.gov/?p=biography> [<https://perma.cc/SG24-GNXQ>] (last visited July 6, 2017).

¹⁴³ *See Biography*, U.S. SENATOR JOHN HOEVEN OF NORTH DAKOTA, <https://www.hoeven.senate.gov/about/biography> [<https://perma.cc/X4UH-BTWW>] (last visited July 6, 2017).

¹⁴⁴ *See* S. Amdt. 3753, 162 CONG. REC. S2048 (Apr. 13, 2016).

¹⁴⁵ *Id.*

North Dakota issued its ruling in *Valley Med Flight, Inc. v. Dwelle*.¹⁴⁶ As one of the senators from North Dakota,¹⁴⁷ Senator Hoeven was surely aware of the United States District Court for the District of North Dakota's decision, which may explain the similarities in language shared by Amendment 3753 and the North Dakota statute.¹⁴⁸ Unfortunately, Amendment 3753 "was ordered to lie on the table,"¹⁴⁹ meaning that the Senate wished to take a negative position on the amendment and wanted to express its final action on it.¹⁵⁰

However, Senator Tester continued working for a way to give more power in the air ambulance arena back to the states. He cleared a huge obstacle on June 9, 2016, when the Senate Appropriations Committee submitted a report (accompanying the 2017 Labor, Health and Human Services, and Education Appropriations Bill) that included language directing the Government Accountability Office (GAO) to study "air ambulance services and payment structures."¹⁵¹ While the Senate Appropriations Committee report itself does not immediately give states the power to regulate the air ambulance industry within their borders, Senator Tester stressed that this small victory was "a 'giant' step in the right direction."¹⁵² Senator Tester elaborated on how Congress and states could use the results from the report, saying "[w]e don't have a lot of information on this quite frankly, and this will give us some information so that we can talk to the air ambulance services and potentially develop some rules around these air ambulances."¹⁵³ Having been approved by the Senate Appropriations Committee, the 2017 Labor, Health and Human Services, and Education Appropriations Bill was placed on the

¹⁴⁶ See *id.*; *Valley Med Flight, Inc. v. Dwelle*, 171 F. Supp. 3d 930 (D.N.D. 2016) ("Signed March 21, 2016").

¹⁴⁷ See *Biography*, U.S. SENATOR JOHN HOEVEN OF NORTH DAKOTA, *supra* note 143.

¹⁴⁸ Compare S. Amdt. 3753, with N.D. CENT. CODE ANN. § 23-27-04.10 (West 2016).

¹⁴⁹ S. Amdt. 3753, 162 CONG. REC. S2048 (Apr. 13, 2016).

¹⁵⁰ *Enactment of a Law: Motions, Quorums, and Votes*, U.S. SENATE, https://www.senate.gov/legislative/common/briefing/Enactment_law.htm#6 [<https://perma.cc/F5RS-NMCV>] (last visited July 6, 2017).

¹⁵¹ S. REP. NO. 114-274, at 128 (2016).

¹⁵² Angela Marshall, *Air Ambulance Reform Effort Passes U.S. Senate Committee*, ABC FOX MONTANA (June 9, 2016), <http://www.abcfoxmontana.com/story/32188525/air-ambulance-reform-effort-passes-us-senate-committee> [<https://perma.cc/Z6R4-4Q7H>].

¹⁵³ *Id.*

Senate Legislative Calendar on June 9, 2016.¹⁵⁴ Once the GAO submits its report, members of Congress will have more information that highlights the importance of this issue. Senator Tester's Communication Director Marnee Banks emphasized the need for more information when discussing Senator Tester's and Senator Hoeven's earlier failed effort: "This is the first time the Senate has tackled the issue of these outrageously high prices of air ambulances. So it is going to take a while for [Senator Tester] and Senator Hoeven to educate their colleagues on [its] importance" ¹⁵⁵ With more than 550,000 patients using air ambulances each year,¹⁵⁶ education is sorely needed, and will ideally lead to congressional action in the near future.

V. WHY SHOULD AIR AMBULANCES FALL OUTSIDE THE ADA?

A person in the middle of a medical emergency requiring air transport for treatment does not have the luxury of making sure that the transporting air ambulance is a provider covered by the patient's insurance, nor does the patient have the luxury of even inquiring as to the price of using such a service.¹⁵⁷ To account for this problem, this article argues that Congress must exempt air ambulances from the purview of ADA preemption because of conflicting congressional intent, because Supreme Court precedent has all but handcuffed the courts, and because of the severe inequality of power that exists in the air ambulance provider-patient relationship.

A. CONGRESSIONAL INTENT

When interpreting express preemption clauses, the "task is to ascertain Congress' intent in enacting the federal statute at issue."¹⁵⁸ The United States District Court for the District of North Dakota in *Valley Med Flight, Inc. v. Dwelle* said that legislation intending "to prevent air ambulance service providers . . . from imposing exorbitant fees on patients . . . is precisely the

¹⁵⁴ *Appropriations for Fiscal Year 2017*, CONGRESS.GOV, <https://www.congress.gov/resources/display/content/Appropriations+or+Fiscal+Year+2017> [https://perma.cc/4QRS-AF74] (last visited July 7, 2017).

¹⁵⁵ Corin Cates-Carney, *Air Ambulance Reform Effort Dies in US Senate*, MONTANA PUBLIC RADIO (Apr. 15, 2016), <http://mtpr.org/post/air-ambulance-reform-effort-dies-us-senate> [https://perma.cc/K79X-X6LR].

¹⁵⁶ See *Consumer Alert: Understanding Air Ambulance Insurance*, *supra* note 20.

¹⁵⁷ See Jordon, *supra* note 38.

¹⁵⁸ *Shaw v. Delta Air Lines, Inc.*, 463 U.S. 85, 95 (1983).

type of law Congress sought to preempt when it enacted the ADA.¹⁵⁹ While Congress has demonstrated its intent “to rest sole responsibility for supervising the aviation industry with the federal government,”¹⁶⁰ Congress surely did not intend to allow providers to charge exorbitant fees on patients concerned about their health. Many of the courts rely on the argument that state statutes regulating the air ambulance industry are the exact type of laws that Congress meant to preempt when it enacted the ADA.¹⁶¹ However, would Congress really intend for medical patients to be taken advantage of just to get treatment that could save their lives? While there is evidence to suggest that Congress did not intend for the ADA to preempt safety measures,¹⁶² the ADA makes it clear that Congress *did* intend to preempt pricing regulations imposed by states.¹⁶³ The point where one draws the line between price and safety is unclear. Equally unclear is whether the law views one as being out-and-out more important than the other, or whether the two are to be treated equally, notwithstanding any arguments of morality.

An analysis of the legislative intent behind the ADA sheds light on Congress’ true goals when passing the ADA.¹⁶⁴ When examining legislative or “statutory intent,” the starting point is “the language employed by Congress and the assumption that the ordinary meaning of that language accurately expresses the legislative purpose.”¹⁶⁵ The policy statement contained in 42 U.S.C. § 40101 confirms that Congress felt “assigning and maintaining safety [was] the highest priority” and that Congress is committed to “preventing deterioration in established safety procedures”¹⁶⁶ Further, Congress noted that its “clear intent, encouragement, and dedication [is] to further the highest degree of safety in air transportation”¹⁶⁷ As air ambulances are a medical service,¹⁶⁸ surely the air ambulance industry would fall under the safety umbrella.

¹⁵⁹ Valley Med Flight, Inc. v. Dwelle, 171 F. Supp. 3d 930, 942 (D.N.D. 2016).

¹⁶⁰ Abdullah v. Am. Airlines, Inc., 181 F.3d 363, 368 (3d Cir. 1999).

¹⁶¹ See, e.g., Dwelle, 171 F. Supp. 3d at 942; Med-Trans Corp. v. Benton, 581 F. Supp. 2d 721, 736 (E.D.N.C. 2008).

¹⁶² See Resendiz, *supra* note 16, at 343–44.

¹⁶³ See 49 U.S.C. § 41713(b)(1) (2012).

¹⁶⁴ See Resendiz, *supra* note 16, at 343.

¹⁶⁵ Morales v. Trans World Airlines, Inc., 504 U.S. 374, 383 (1992) (internal quotation marks omitted).

¹⁶⁶ 49 U.S.C. §§ 40101(a)(1), (a)(3) (2012).

¹⁶⁷ 49 U.S.C. § 40101(a)(3) (2012).

¹⁶⁸ See *supra* Part II.

However, the plain language of the ADA makes it clear that Congress meant to preempt state regulation of prices charged by air ambulance providers.¹⁶⁹ Thus, an inevitable conflict exists between whether state air ambulance regulations control measures governing the safety of patients or whether they control prices. The answer, in reality, appears to be that under the ADA, state air ambulance regulations can control either measures associated with patient safety *or* prices. Clearly, the courts have taken the position that the state regulations discussed herein lean toward the pricing side of the conflict.¹⁷⁰ On the other hand, there are instances holding that some issues are not preempted, therefore allowing the states to regulate some air ambulance issues. Those issues revolve largely around aspects related to the quality and standard of medical care given to patients.¹⁷¹ While these findings do not provide a conclusive answer to the question, because of this dichotomy it appears state regulation must relate to standards of medical care in some capacity if they are to survive ADA preemption challenge.

Preemption is no longer the best option because competition does not effectively serve emergency medical situations. Congress enacted the ADA after determining “that deregulation of the airline industry would lead to greater reliance on market forces resulting in greater efficiency, innovation, lower prices, and enhanced quality and variety of air transportation services.”¹⁷² Congress thought this “reliance on competitive market forces and on actual and potential competition” would best serve the aircraft industry.¹⁷³ Congress even included a preemption provision in the ADA to prevent states from getting around deregulation by passing their own regulatory laws.¹⁷⁴ However, Congress was also clear in the difference between safety and

¹⁶⁹ See 49 U.S.C. § 41713(b)(1) (2012); see also *Valley Med Flight, Inc. v. Dwelle*, 171 F. Supp. 3d 930, 942 (D.N.D. 2016).

¹⁷⁰ See, e.g., *Dwelle*, 171 F. Supp. 3d at 942; *Eagle Air Med Corp. v. Colorado Bd. of Health*, 570 F. Supp. 2d 1289, 1292 (D. Colo. 2008) (citing *Morales*, 504 U.S. at 388, 390–91).

¹⁷¹ See *Hiawatha Aviation of Rochester, Inc. v. Minnesota Dep’t of Health*, 389 N.W.2d 507, 509 (Minn. 1986); GAO-10-907, at 23 tbl.3, 36–40 app. III (2010) (reproduced *infra* Appendix); Lovshin, *supra* note 17, at 34 (“states do have limited regulatory authority over air ambulance providers around medical and quality standards of care”).

¹⁷² *Dwelle*, 171 F. Supp. 3d at 938 (citing *Morales*, 504 U.S. at 378).

¹⁷³ 49 U.S.C. § 40101(a)(6) (2012).

¹⁷⁴ See *Morales*, 504 U.S. at 378.

pricing regulations.¹⁷⁵ Clearly Congress believed that a competitive market would lead to lower prices, but it is doubtful that Congress would really intend for competition to govern the safe, timely, and effective administration of healthcare in emergency situations.

However, competition won out against healthcare services in *Med-Trans Corp. v. Benton*, where the court found that North Carolina's prescription of behavior (requiring a certificate of need) necessary for an air ambulance provider to operate in the state directly contravened the pro-competition purposes of the ADA, and those requirements limiting the ability of an air ambulance provider to operate in the state were thus related to the provider's prices, routes, or services.¹⁷⁶ Additionally, in *Valley Med Flight, Inc. v. Dwelle*, the court actually ruled in favor of a result that was the direct opposite of what Congress intended.¹⁷⁷ By holding that the North Dakota statute was preempted, the court essentially said that the state could not "prevent air ambulance service providers, who are not participating providers, from imposing exorbitant fees on patients."¹⁷⁸ That flies directly in the face of Congress' intent in enacting the ADA: that a competitive market would lead to lower prices.¹⁷⁹

B. PATIENTS REMAIN AT THE MERCY OF PROVIDERS DUE TO UNEQUAL BALANCE OF POWER

Air ambulance providers control virtually every aspect of air ambulance services, and oddly enough, the patient has little to no control. From setting the price, to working with different insurance carriers, the air ambulance providers are in near-total control. The patient is simply along for the ride. The following subsections will discuss the costs of air ambulance services, the complications that come with in-network versus out-of-network providers, and a possible template for state action based on the Montana statute.¹⁸⁰

¹⁷⁵ See *supra* Part V., Section A.

¹⁷⁶ *Med-Trans Corp. v. Benton*, 581 F. Supp. 2d 721, 736 (E.D.N.C. 2008).

¹⁷⁷ *Dwelle*, 171 F. Supp. 3d at 942.

¹⁷⁸ *Id.*

¹⁷⁹ See *Morales*, 504 U.S. at 378.

¹⁸⁰ MONT. CODE ANN. § 50-6-320 (West 2015) (discussed in Part IV., Section C.1.g.).

1. *Costs of Services*

Use of an air ambulance can be an expensive event. The average air ambulance trip will cost \$12,000 to \$25,000 per flight, before insurance kicks in.¹⁸¹ Providers justify the costly charges by citing the cost of equipment,¹⁸² maintenance, their round-the-clock on-call flight and medical personnel, and the intrinsic value of the air ambulance service.¹⁸³ When setting prices, providers must estimate the volume of patient transports and how many of those transports will and will not end up paying for the service.¹⁸⁴ Some air ambulance providers recognize the costs of their services, and offer programs designed to help would-be patients in the future. For example, LifeNet, for an annual fee of just \$49, will pay \$10,000 if a subscriber's family member has a medical necessity that requires transportation by air ambulance.¹⁸⁵ Some air ambulance providers have also created membership-based subscription programs that will cover transport between hospitals¹⁸⁶ or that can cover the patient's full cost when that patient needs an air ambulance.¹⁸⁷ However, membership programs come with a large caveat: generally, to take advantage of the benefits offered by a membership subscription, the provider that offers the membership must be the air ambulance that transports the patient.¹⁸⁸ Unfortunately, patients often do not have any input or choice in the air ambulance provider that responds when they require transport.¹⁸⁹

2. *Choice of Provider: In-Network vs. Out-of-Network Providers*

When an air ambulance provider is part of an insurance carrier's network (in-network), the provider accepts the reimbursement rate of the insurance carrier, and any additional cost to the patient is written off.¹⁹⁰ In contrast, an out-of-network provider may accept the reimbursement rate of the insurance car-

¹⁸¹ See *DIFS Consumer Counselor Insurance Information Sheet*, *supra* note 26; see also *Consumer Alert: Understanding Air Ambulance Insurance*, *supra* note 20.

¹⁸² See *DIFS Consumer Counselor Insurance Information Sheet*, *supra* note 26 ("The high price accounts for the initial aircraft cost which can reach \$6 million . . .").

¹⁸³ See Lovshin, *supra* note 17.

¹⁸⁴ See Bernard F. Diederich, *Air Ambulance, Rescuer or Rescued?*, 62 *FED. LAW.* 67, 71 (2015).

¹⁸⁵ See Jordon, *supra* note 38.

¹⁸⁶ See *id.*

¹⁸⁷ See GAO-10-907, at 6 n.7.

¹⁸⁸ See *id.*

¹⁸⁹ See *infra* Part V, Section B.2.

¹⁹⁰ See Jordon, *supra* note 38.

rier, but has the option to balance bill¹⁹¹ the patient for the remainder of the cost.¹⁹² However, patients rarely are aware whether the air ambulance that responds is in-network or out-of-network.¹⁹³ Even worse, in emergency situations, patients may not even be capable of asking if the ambulance is an in-network provider, or what their insurance coverage looks like.¹⁹⁴ Douglas County's Chief Deputy Sheriff Tom Wheeler said: "A lot of times the person is unconscious or there's trauma or shock. We're not asking them what to do. We're providing the best response we can, and you've got to make decisions right now."¹⁹⁵

The patient is typically not even the party that requests an air ambulance; that determination falls to the paramedics on the scene, and scope of insurance coverage is a non-factor in that decision.¹⁹⁶ Even the providers do not consider whether they are in or out of a patient's coverage network; such is the case with emergency situations, where every second counts.¹⁹⁷

3. *A Possible Template for State Action*

States looking to "assist [their] consumers with regard to the availability and affordability of air ambulance service" may be able to take a cue from the Montana statute.¹⁹⁸ As an incentivizing measure, rather than a regulatory one, statutes similar to the Montana statute may be better equipped to survive ADA challenge. Air ambulance providers would actually be making "a business decision" when they choose to take advantage of whatever exemptions or benefits the state chooses to offer in exchange for compliance with the statute (in the Montana statute, the state exempted providers from insurance statutes),¹⁹⁹ and would not be forced into working with other providers in order to continue operating. This would overcome the point

¹⁹¹ See *supra* text accompanying notes 39–40.

¹⁹² See Jordon, *supra* note 38.

¹⁹³ See Springer, *supra* note 1.

¹⁹⁴ Kathleen Woodford, *Air Ambulance Charges Can Reach \$100,000*, CLARK FORK VALLEY PRESS (May 4, 2016), <https://www.testersenate.gov/?p=news&id=4566> [<https://perma.cc/E68W-49ZJ>].

¹⁹⁵ See Jordon, *supra* note 38.

¹⁹⁶ See *id.*

¹⁹⁷ See *id.* ("In emergencies, 'we never even ask . . . We just respond. Insurance never comes to our thoughts at that time. Hopefully they have insurance, and if they don't, we work with them on a case-by-case basis.'").

¹⁹⁸ MONT. CODE ANN. § 50-6-320(1) (West 2015); see discussion *supra* Part IV., Section C.1.g.

¹⁹⁹ See § 50-6-320(2).

made by the court in *Valley Med Flight, Inc. v. Dwelle*.²⁰⁰ Providers would only have to work with other providers and accept membership programs offered by other providers if they wanted to be exempted from insurance statutes: “Any private air ambulance service membership program must have arrangements with other air ambulance service providers in [the state] to the extent reasonably possible to ensure maximum geographic coverage within the state for the subscribers to the program.”²⁰¹ If the provider does not wish to work with other providers, they can carry on with business as usual, and will not be in danger of having to cease operations as a result.²⁰²

Subscription-based membership programs do not escape the problems facing the air ambulance industry, nor are they a perfect solution. For patients to benefit from these programs, generally the transporting provider must be the same one that offers the membership subscription.²⁰³ But, since patients have little say in what provider picks them up,²⁰⁴ they cannot be sure that their subscription will cover their use of the air ambulance. The Montana statute solves this conundrum. To take advantage of the benefits that accompany exemption from insurance statutes, providers must arrange with other air ambulance providers to reasonably “ensure maximum geographic coverage within the state for the subscribers to the program.”²⁰⁵ More providers accepting the subscriptions offered by rival providers would noticeably increase the likelihood that a responding air ambulance provider would accept the membership subscription of a patient. This would avoid patients having to worry about whether it will be their subscribing provider that responds, and would also keep patients from sacrificing valuable time waiting for their subscribing provider to be available to respond. While it would be imprudent to suggest that every air ambulance provider within a state would avail themselves of the benefits offered by

²⁰⁰ See *Valley Med Flight, Inc. v. Dwelle*, 171 F. Supp. 3d 930, 941 (D.N.D. 2016) (“The State argues that becoming a ‘participating provider’ is simply a business decision made by air ambulance operators. However, it is clear to the Court that air ambulance operators who work in the North Dakota market have no choice but to become a ‘participating provider’ (and accept an insurer’s rates) or discontinue operating in the state.”).

²⁰¹ § 50-6-320(3).

²⁰² See §§ 50-6-320(2), (3).

²⁰³ See GAO-10-907, at 6 n.7.

²⁰⁴ See *supra* Part V., Section B.2.

²⁰⁵ § 50-6-320(3).

such a statute, one might presume that some air ambulance providers would explore the opportunity.

This approach does not solve the overall issue, but is a step in a more affordable direction. While consumers would have to purchase membership subscriptions in order to benefit, if statutes like this were to become more commonplace, that small investment could mean a difference of multiple thousands of dollars in the event an air ambulance is needed.²⁰⁶ It is important to note that the Montana statute has yet to be challenged on ADA preemption grounds, but as it is merely incentivizing, not prescriptive, there is reason to believe that it would survive such a challenge.

C. PRECEDENT LEAVES NO OTHER OPTION

Decisions by the Supreme Court and lower courts appear to have halted efforts by state legislators in their tracks.²⁰⁷ Further, despite the intentions of Congress, it is increasingly clear that the courts are handcuffed on the inevitable conflict created by this issue.²⁰⁸

*Chandler v. Roudebush*²⁰⁹ seems to support the argument that the federal courts should take up the air ambulance industry preemption issue. The Court noted that issues that “require[] non-partisan judgment” are best heard by federal judges.²¹⁰ This is because federal jurists are, in theory, shielded from outside influence.²¹¹ Given the unequal balance of power that exists between patients and providers, the air ambulance industry preemption issue clearly would benefit from non-partisan judgment.²¹² As numerous federal courts have already addressed the issue, that leaves the Supreme Court as the best judicial option. The Court should be able to remove politics from the

²⁰⁶ Compare GAO-10-907, at 6 n.7, with *DIFS Consumer Counselor Insurance Information Sheet*, *supra* note 26 (“The average air ambulance trip . . . costs between \$12,000 to \$25,000 per flight.”).

²⁰⁷ See, e.g., *Am. Airlines, Inc. v. Wolens*, 513 U.S. 219 (1995); *Morales v. Trans World Airlines, Inc.*, 504 U.S. 374 (1992); *Valley Med Flight, Inc. v. Dwelle*, 171 F. Supp. 3d 930, 942 (D.N.D. 2016).

²⁰⁸ See *Dwelle*, 171 F. Supp. 3d at 942 (“While the policy choices the State is attempting to impose . . . are well-intentioned and enacted in good faith, it is clear that Congress has assumed the field in the arena of air carrier regulation and noble intent does not save the law from preemption.”).

²⁰⁹ 425 U.S. 840 (1976).

²¹⁰ *Id.* at 851 (internal quotations omitted).

²¹¹ See *id.*

²¹² See *supra* Part V., Section B.

formula completely, as the life tenure enjoyed by Supreme Court justices would, theoretically at least, make the Court “more likely to withstand political pressures and render their decisions in a climate tempered by judicial reflection and supported by historical judicial independence.”²¹³

Indeed, the Supreme Court has addressed the preemption issue. In *American Airlines, Inc. v. Wolens*, the Court held that the ADA preempted prescriptive, conduct-controlling laws.²¹⁴ The problem facing states post-*Wolens* is figuring out how they can regulate the air ambulance industry without controlling air ambulance providers’ conduct. That problem is multiplied when reminded of the Supreme Court’s earlier holding in *Morales v. Trans World Airlines, Inc.* that the ADA’s broad preemptive purpose stems from the “relating to” language.²¹⁵ It would appear to be a difficult road for state lawmakers to pass legislation that could survive scrutiny under both *Morales* and *Wolens*.

In *United States v. Carolene Products Co.*, the Supreme Court expressed the idea that there would be general discretion to the legislature as to the laws that are passed, in the assumption that they “rest[] upon some rational basis within the knowledge and experience of the legislators.”²¹⁶ The Court also suggested, in the famous footnote that has come to be known as “the most important footnote in constitutional law,”²¹⁷ that the judicial system can step in to prevent the legislative exploitation of those in weaker or less powerful positions, especially when there “may be a special condition, which tends seriously to curtail the operation of those political processes ordinarily to be relied upon”²¹⁸ In the case of the air ambulance industry, there is such a special condition: federal courts repeatedly holding that state regulation of the air ambulance industry is preempted by the ADA,²¹⁹ as well as the holdings in *Morales*²²⁰ and *Wolens*.²²¹ The holdings in these cases have effectively shut off the ability of

²¹³ *Chandler*, 425 U.S. at 851 (internal quotations omitted).

²¹⁴ *Am. Airlines, Inc. v. Wolens*, 513 U.S. 219, 227–28 (1995).

²¹⁵ *Morales v. Trans World Airlines, Inc.*, 504 U.S. 374, 383 (1992).

²¹⁶ *See United States v. Carolene Products Co.*, 304 U.S. 144, 152 (1938).

²¹⁷ Lincoln Caplan, *Ruth Bader Ginsburg and Footnote Four*, THE NEW YORKER, Sept. 13, 2013.

²¹⁸ *See Carolene Products*, 304 U.S. at 152 n.4.

²¹⁹ *See, e.g., Valley Med Flight, Inc. v. Dwelle*, 171 F. Supp. 3d 930, 942 (D.N.D. 2016); *Med-Trans Corp. v. Benton*, 581 F. Supp. 2d 721, 736 (E.D.N.C. 2008).

²²⁰ *See Morales*, 504 U.S. at 383.

²²¹ *See Am. Airlines, Inc. v. Wolens*, 513 U.S. 219, 227–28 (1995).

state lawmakers to pass legislation regulating the air ambulance industry that will protect their citizens.

However, the courts have about as much likelihood of successfully ruling in favor of state regulation as state lawmakers do, as *Northwest, Inc. v. Ginsberg* suggests that the ADA preempts state common law developed by the courts.²²² While the Supreme Court could still easily address the issue by nature of its chief status, doing so would fly in the face of years of precedent because it would directly oppose *Ginsberg*. Further, while the Supreme Court is a possible option to resolve this issue, there is a temporal component to the issue as well: it can take years before a case is adjudicated by the Supreme Court. That rules out waiting on the Supreme Court as the best option, as countless patients will suffer in the meantime.²²³ By process of elimination, responsibility for regulating the air ambulance industry falls to the United States Congress. In the wake of *EagleMed, LLC v. Wyoming*, the Wyoming Insurance Commissioner, Tom Glause, even went so far as to opine that “Congress needs to exempt the air ambulances from the Aviation Deregulation Act. ‘Once that happens, then the states can take a look at it and address legislation to deal with the issue’”²²⁴

VI. CONCLUSION

In times of serious medical crisis, patients depend on emergency services personnel to arrive quickly and transport them so that they may receive life-saving treatment. The air ambulance industry has grown a great deal since its beginnings on the battlefields of World War I, and advances in technology have helped develop the industry. However, because of legal precedent and air ambulance industry norms, medical patients are the ones who suffer under the ADA. Maintaining that technology and staffing air ambulances is expensive, and without regulation, the patient is left to figure out how to pay an expensive bill while recovering from the injuries he sustained. The legal framework of the ADA has left the courts handcuffed, forcing

²²² *Northwest, Inc. v. Ginsberg*, 134 S. Ct. 1422, 1429–30 (2014).

²²³ See *Consumer Alert: Understanding Air Ambulance Insurance*, *supra* note 20 (“The Association of Air Medical Services estimates that more than 550,000 patients in the U.S. use air ambulances each year.”).

²²⁴ Ben Neary, *Federal Judge Rejects Wyoming Air Ambulance Regulation*, WASH. TIMES (May 25, 2016), <http://www.washingtontimes.com/news/2016/may/25/federal-judge-rejects-wyoming-air-ambulance-regula/> [https://perma.cc/PPG2-SMA2].

them to find state attempts at regulation to be preempted by the ADA, no matter the intent behind the regulatory legislation.

The best solution is for Congress to exempt air ambulances from ADA preemption. Congressional intent shows that safety and aspects of medical care are not meant to be preempted. The cost of an air ambulance transport is as much a part of medical care as the surgery that follows transportation. The fact that the ambulance is a helicopter or a plane rather than a ground vehicle should not be a determining factor, especially when an air ambulance is the only available method of transport. Competition governs in a business setting, but in a life and death healthcare situation, patients need the best available options, not unpaid bills.

VII. APPENDIX²²⁵

Appendix III: Key Court Cases and Opinion Letters from DOT or State Attorneys General

Table 4 summarizes key court cases related to the air ambulance industry. Table 5 summarizes DOT or state Attorneys General Opinions related to the air ambulance industry.

Table 4: Summary of Key Court Cases Related to the Air Ambulance Industry

Court case	Issues court determined to be preempted	Issues court determined not to be preempted
<i>Med-Trans Corp. v. Benton</i> , 581 F. Supp. 2d 721 (E.D. N.C. 2008)	<p>Safety and operational standards</p> <ul style="list-style-type: none"> • "Flight" equipment requirements that cannot be detached from aviation safety and associated solely with EMS. • Prohibiting structural or functional defects affecting the "safe operation of the aircraft." • Regulations requiring crew members to be trained in "in flight emergencies specific to the aircraft used in the program" and "aircraft safety." • Requiring a helicopter pilot to provide backup medical care for EMS personnel. <p>Economic requirements</p> <ul style="list-style-type: none"> • Requiring air ambulances to provide service 24 hours per day. • Certificate of need requirement. • Requirement to document "defined service area." • Requirements to document "a written plan for transporting patients to appropriate facilities when diversion or bypass plans are activated." • Requirements to install very high frequency aircraft transceivers. • Requiring an air ambulance provider to undergo an EMS Peer Committee Review that provides local government officials with a mechanism to prevent an air ambulance provider from operating within the state. 	<p>Medical aspects</p> <ul style="list-style-type: none"> • Requirement for air ambulances to synchronize voice radio communications with local EMS resources (requiring air ambulances to be equipped with special two-way radios to communicate with public safety entities). • Requirements that are primarily medical in nature. • Requirement for air ambulances to be inspected for compliance with medically related regulations. • Medically related equipment, and sanitation, supply and design requirements • Requirement for air carriers to document a plan for inspecting, repairing, and cleaning medical and other patient care related equipment. • Requirement for vehicle or equipment-related training undertaken specifically for the purposes of ensuring proper patient care (i.e., training regarding cabin pressurization as it relates to specific medical conditions). • Requirement for air ambulance to be staffed by at least two persons.
<i>Abdullah v. American Airlines, Inc.</i> , 181 F.3d 363 (3rd Cir. 1999)	<p>Safety and operational standards</p> <ul style="list-style-type: none"> • Standards of care in the field of aviation safety. 	<p>Safety and operational standards</p> <ul style="list-style-type: none"> • Traditional state and territorial law damage remedies for violation of federal aviation standards.
<i>Hiawatha Aviation of Rochester v. Minn. Dept. of Health</i> , 389 N.W.2d 507 (Sup. Ct. Minn. 1986)	<p>Economic requirements</p> <ul style="list-style-type: none"> • Requirement for license from the state to operate. 	<p>Medical aspects</p> <ul style="list-style-type: none"> • Requirements for equipment and promulgation of standards for maintenance of sanitary conditions. • Regulation of staffing requirements and qualifications of personnel as part of traditional role in delivery of medical services.

²²⁵ See GAO-10-907, at 36–40 app. III (note that not all cases included in these tables are ADA cases, and when holding that safety measures are preempted, the ruling body is referring to general aviation safety measures, rather than measures related to patient safety).

Appendix III: Key Court Cases and Opinion
Letters from DOT or State Attorneys General

Court case	Issues court determined to be preempted	Issues court determined not to be preempted
<i>Air Evac v. Robinson</i> , 486 F. Supp. 2d 713 (M.D. Tenn. 2007)	Flight and safety requirements <ul style="list-style-type: none"> Requirement for helicopters licensed in the state to have certain avionics equipment on board. 	
<i>Eagle Air Med Corp. v. Colorado Board of Health</i> , 570 F. Supp. 2d 1289, (D. Col. 2008)	Safety standards <ul style="list-style-type: none"> Requirement for air ambulance providers to acquire and maintain accreditation by the Commission on Accreditation of Medical Transport Systems, whose standards primarily address aviation safety issues. 	
<i>Rocky Mountain Holdings, LLC v. Cates, Director, Mo. Dept. of Health</i> , No. 97-4165-CV-C-9 (W.D. Mo. Central Div. September 3, 1997)	Economic requirements <ul style="list-style-type: none"> Making the determination that the "public convenience and necessity" requires a proposed air ambulance service. 	

Source: GAO analysis of key court cases.

Note: State court decisions are generally limited to the state, and federal appellate decisions, the circuit, in which the challenge was raised. However, these decisions could be used as support for legal challenges in other states or circuits.

Table 5: Summary of DOT or State Attorneys General Opinions Related to the Air Ambulance Industry

DOT and State Attorneys General letters	Issues DOT and State Attorneys General determined to be preempted	Issues DOT and State Attorneys General determined not to be preempted
DOT to Texas 2/20/2007	<p>Safety and operational standards</p> <ul style="list-style-type: none"> Regulation of flight safety aspects of medical services, such as safe storage of equipment. Regulating aviation safety, including minimum standards for aircraft, pilots, and "weather minimums." Requiring accreditation by outside body that sets aviation standards. <p>Economic requirements</p> <ul style="list-style-type: none"> Regulating when and where ambulances can fly, scheduling, routing, and rates. Limiting federal preemption to interstate transportation. Regulating advertising. Insurance requirements (air carrier liability insurance for injuries, death, and/or property damage to third parties caused by crash of aircraft). 	<p>Medical aspects</p> <ul style="list-style-type: none"> Minimum requirements for medical equipment. Regulating medical services, particularly as delivered to patients/passengers in the cabins of aircraft. Training and licensing requirements for medical crew. Insurance addressing "other perils" (such as medical malpractice by the medical staff) would be considered on a case-by-case basis. Requiring accreditation of an outside body that deals exclusively with medical care.

Appendix III: Key Court Cases and Opinion
Letters from DOT or State Attorneys General

DOT and State Attorneys General letters	Issues DOT and State Attorneys General determined to be preempted	Issues DOT and State Attorneys General determined not to be preempted
DOT to Texas 5/23/2007	Flight requirements <ul style="list-style-type: none"> • Requiring certain avionics equipment. • Licensing requirements to ensure ambulances are following FAA flight requirements. • Taking punitive action, in context of a state licensing regime, if FAA requirements are not being followed. 	Flight requirements <ul style="list-style-type: none"> • Review of air ambulance records and documents to ensure air ambulances are following FAA requirements. • Bringing to the attention of FAA or DOT enforcement office any information or evidence that a carrier may be violating federal requirements.
DOT to Texas 11/3/2008	Economic requirements <ul style="list-style-type: none"> • Requiring air ambulance service be available to all people, including nonsubscribers. • Establishing minimum standards for the creation and operation of an EMS subscription program, including obtaining State Health Services department approval (which depends on many levels of approval from state and local officials) prior to soliciting, advertising, or collecting subscription or membership fees. • Requiring air ambulance provider based in another state to obtain an EMS license from the state. • Compliance with state and federal rules on billing and reimbursement. • Requirement to show financial responsibility through bonding or self-insurance in order to receive state approval for EMS subscription program. 	

Appendix III: Key Court Cases and Opinion
Letters from DOT or State Attorneys General

DOT and State Attorneys General letters	Issues DOT and State Attorneys General determined to be preempted	Issues DOT and State Attorneys General determined not to be preempted
DOT to Hawaii 4/23/2007	<p>Safety and operational standards</p> <ul style="list-style-type: none"> Regulating aircraft operation and equipment. Medical equipment installation and storage aboard aircraft. Regulating pilot qualifications. <p>Economic requirements</p> <ul style="list-style-type: none"> State operating certificates based on state's determination of "public need" for it, the "reasonableness" of the "cost of the ... service," and other criteria including "quality, accessibility, availability and acceptability." Requirement to operate 24 hours per day. (Note: A 24-hour requirement may be pursued through contractual means rather than through regulatory actions.) A state medical program, ostensibly dealing with only medical equipment/supplies aboard aircraft, that is so pervasive or so constructed as to be indirectly regulating in the preempted economic area of air ambulance prices, routes, or services. Accident liability insurance. <p>Flight requirements</p> <ul style="list-style-type: none"> Requirements as to medical training for flight crew. 	<p>Medical aspects</p> <ul style="list-style-type: none"> Requirements for patient oxygen masks, litters, blankets, sheets, and trauma supplies.
DOT to San Diego 1/2/1997	<p>Flight requirements</p> <ul style="list-style-type: none"> Aircraft configuration and airman certification. 	
DOT to Nebraska 12/5/1989	<p>Economic requirements</p> <ul style="list-style-type: none"> Controlling entry into the field of interstate air ambulances, or imposing economic regulations. 	<p>Medical aspects</p> <ul style="list-style-type: none"> Equipment requirements as part of regulation of medical services. Staffing requirements, personnel qualifications, and sanitary condition standards. Governing medical services.
DOT to Arizona 6/16/1986	<p>Economic requirements</p> <ul style="list-style-type: none"> Certificate of public convenience and necessity. Regulating rates. Regulating operating and response times and the base of operations. Bonding requirements. Accounting and report systems. 	
DOT to Florida 10/10/2007	<p>Economic requirements</p> <ul style="list-style-type: none"> Certificate of public convenience and necessity from each county within the state where it wants to operate (with counties free to reject applications). 	

Appendix III: Key Court Cases and Opinion
Letters from DOT or State Attorneys General

DOT and State Attorneys General letters	Issues DOT and State Attorneys General determined to be preempted	Issues DOT and State Attorneys General determined not to be preempted
Letter from Richard E. Israel, Assistant Attorney General, Maryland, to Sen. John J. Hafer (4/11/02)	<p>Safety and operational requirements</p> <ul style="list-style-type: none"> For intrastate commercial air ambulances: "Clearance" regulations, including regulation that air ambulance can only respond to scene of public safety emergency if cleared by the state communication center. <p>Economic requirements</p> <ul style="list-style-type: none"> For intrastate commercial air ambulances, requirements that responses to transports shall be carried out without regard to patient's ability to pay and with no charge to the state or a jurisdictional EMS program. For interstate commercial air ambulances: "Clearance" regulations that place limitations on charges. For interstate commercial air ambulances: "Clearance" regulations dealing with helicopter landings that allow clearance decisions based on considerations of economic competition. 	<p>Medical requirements</p> <ul style="list-style-type: none"> For interstate commercial air ambulances: "Clearance" regulations that reference a determination of the safety and appropriateness of a helicopter landing for patient transport that are concerned only with the health and safety of the patient.
Tex. Atty. Gen. Op. GA-0634, 2008 WL 4964344 (Tex. A.G.)	<p>Medical aspects</p> <ul style="list-style-type: none"> Regulation by Department of State Health Services of EMS providers' subscription programs for emergency medical services. 	
1987 Ariz. Op. Atty. Gen. 261, 1987 WL 121388 (Ariz. AG 1987)	<p>Economic regulations</p> <ul style="list-style-type: none"> Economic regulation under certificate of need statutes. 	<p>Safety and operational requirements</p> <ul style="list-style-type: none"> Essential public health and safety matters (regulation of transport of sick, injured, wounded, or otherwise incapacitated or helpless individuals by air ambulance only in critical and emergency situations and only with regard to essential medical health and safety aspects of such transport).

Sources: GAO analysis of DOT and state attorneys general opinions.



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